OEM

USER MANUAL

KPM216HII ETH

Commands manual: **77200000000900**

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THE IMAGES USED IN THIS MANUAL ARE USED AS AN ILLUSTRATIVE EXAMPLES. THEY COULDN'T REPRODUCE THE DESCRIBED MODEL FAITHFULLY.

UNLESS OTHERWISE SPECIFIED, THE INFORMATION GIVEN IN THIS MANUAL
ARE REFERRED TO ALL MODELS IN PRODUCTION AT THE ISSUE DATE OF THIS DOCUMENT.

GENERAL SAFETY INFORMATION

Your attention is drawn to the following actions that could compromise the characteristics of the product:

- Read and retain the instructions which follow.
- Follow all indications and instructions given on the device.
- Make sure that the surface on which the device rests is stable. If it is not, the device could fall, seriously damaging it.
- Make sure that the device rests on a hard (non-padded) surface and that there is sufficient ventilation.
- When positioning the device, make sure cables do not get damaged.
- Use the type of electrical power supply indicated on the device label. If uncertain, contact your dealer.
- Make sure the electrical system that supplies power to the device is equipped with a ground wire and is protected by a differential switch.
- Do not block the ventilation openings.
- Do not insert objects inside the device as this could cause short-circuiting or damage components that could jeopardize printer functioning.
- Do not carry out repairs on the device yourself, except for the normal maintenance operations given in the user manual.
- Make sure that there is an easily-accessible outlet with a capacity of no less than 10A closely to where the device is to be installed.
- Periodically perform scheduled maintenance on the device to avoid dirt build-up that could compromise the correct, safe operation of the unit.
- Before any type of work is done on the machine, disconnect the power supply.
- Do not touch the head heating line with bare hands or metal objects. Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.

GENERAL INSTRUCTIONS

CUSTOM ENGINEERING S.p.A. declines all responsibility for accidents or damage to persons or property occurring as a result of tampering, structural or functional modifications, unsuitable or incorrect installations, environments not in keeping with the equipment's protection degree or with the required temperature and humidity conditions, failure to carry out maintenance and periodical inspections and poor repair work.

CE THE CE MARK AFFIXED TO THE PRODUCT CERTIFY THAT THE PRODUCT SATISFIES THE BASIC SAFETY REQUIREMENTS.

The device is in conformity with the essential Electromagnetic Compatibility and Electric Safety requirements laid down in Directives 2006/95/CE and 2004/108/CE inasmuch as it was designed in conformity with the provisions laid down in the following Standards:

- EN 55022 Class B *(Limits and methods of measurements of radio disturbance characteristics of Information Technology Equipment)*
- EN 55024 *(Information Technology Equipment – Immunity characteristics – Limits and methods of measurement)*
- EN 60950-1 *(Safety of information equipment including electrical business equipment)*

GUIDELINES FOR THE DISPOSAL OF THE PRODUCT

The crossed-out rubbish bin logo means that used electrical and electronic products shall NOT be mixed with unsorted municipal waste. For more detailed information about recycling of this product, refer to the instructions of your country for the disposal of these products.

- Do not dispose of this equipment as miscellaneous solid municipal waste, but arrange to have it collected separately.
- The re-use or correct recycling of the electronic and electrical equipment (EEE) is important in order to protect the environment and the wellbeing of humans.
- In accordance with European Directive WEEE 2002/96/EC, special collection points are available to which to deliver waste electrical and electronic equipment and the equipment can also be handed over to a distributor at the moment of purchasing a new equivalent type.
- The public administration and producers of electrical and electronic equipment are involved in facilitating the processes of the re-use and recovery of waste electrical and electronic equipment through the organisation of collection activities and the use of appropriate planning arrangements.
- Unauthorised disposal of waste electrical and electronic equipment is punishable by law with the appropriate penalties.

The format used for this manual improves use of natural resources reducing the quantity of necessary paper to print this copy.

INDEX

1 INTRODUCTION 7
1.1 Document structure 7
1.2 Explanatory notes used in this manual 7

2 DESCRIPTION 9
2.1 Unpacking the device 9
2.2 Device components 10
2.3 Device components: connectors view 12
2.4 Key functions 13
2.5 Status led flashes 15

3 INSTALLATION 17
3.1 Mounting specifications 17
3.2 Fastening (horizontal paper out only) 18
3.3 Fixing brackets 19
3.4 Near paper end sensor 21
3.5 Connections for Ethernet model 23
3.6 Pinout 24
3.7 Driver 27

4 OPERATION 29
4.1 Adjusting paper width 29
4.2 Turning on the device 30
4.3 Paper insertion 31
4.4 Issuing ticket 33
4.5 Memory card insertion 39

5 CONFIGURATION 41
5.1 Configuration mode 41
5.2 Setup report 43
5.3 Printer status 44
5.4 Printer parameters 45
5.5 Ethernet parameters 48
5.6 Hexadecimal dump 49

6 MAINTENANCE 51
6.1 Ejector paper jam 51
6.2 Autocutter paper jam 53
6.3 Planning of cleaning operations 56
6.4 Cleaning 57
6.5 Upgrade firmware 64

7 SPECIFICATIONS 67
7.1 Hardware specifications 67
7.2 Character specifications in ESC/POS™ emulation 70
7.3 Printer dimensions 70
7.4 Power supply dimensions cod.964GE010000350 (optional) 72
7.5 Specifications for ticket with black mark 73
7.6 Character sets in ESC/POS™ emulation 74
7.7 Character sets in SVELTA emulation 81

8 CONSUMABLES 83

9 ACCESSORIES 85
9.1 External paper roll holder 86
9.2 Kit for near paper end 88

10 ALIGNMENT 89
10.1 Enable alignment 89
10.2 Calibration 89
10.3 Alignment parameters 91
10.4 Printing area 95

11 TECHNICAL SERVICE 97

12 ADVANCED FUNCTIONS 99
12.1 File sharing 99
12.2 Embedded Web Server 100
12.3 Embedded Web Server: access 101
12.4 Embedded Web Server: functions 103
12.5 Locator 105
12.6 Drivers installation 106
12.7 Logos management 107
12.8 Fonts management 109
12.9 Setup 111

1 INTRODUCTION

1.1 Document structure

This document includes the following chapters:

1	INTRODUCTION	information about this document
2	DESCRIPTION	general description of device
3	INSTALLATION	information required for a correct installation of the device
4	OPERATION	information required to make the device operative
5	CONFIGURATION	description of the configuration parameters of the device
6	MAINTENANCE	information for a correct periodic maintenance
7	SPECIFICATION	technical specification for the device and its accessories
8	CONSUMABLES	description and installation of the available consumables for the device
9	ACCESSORIES	description and installation of the available accessories for the device
10	ALIGNMENT	information required for managing the paper alignment
11	TECHNICAL SERVICE	information required for contacting the technical service
12	ADVANCED FUNCTIONS	information about special functions available with the device

1.2 Explanatory notes used in this manual

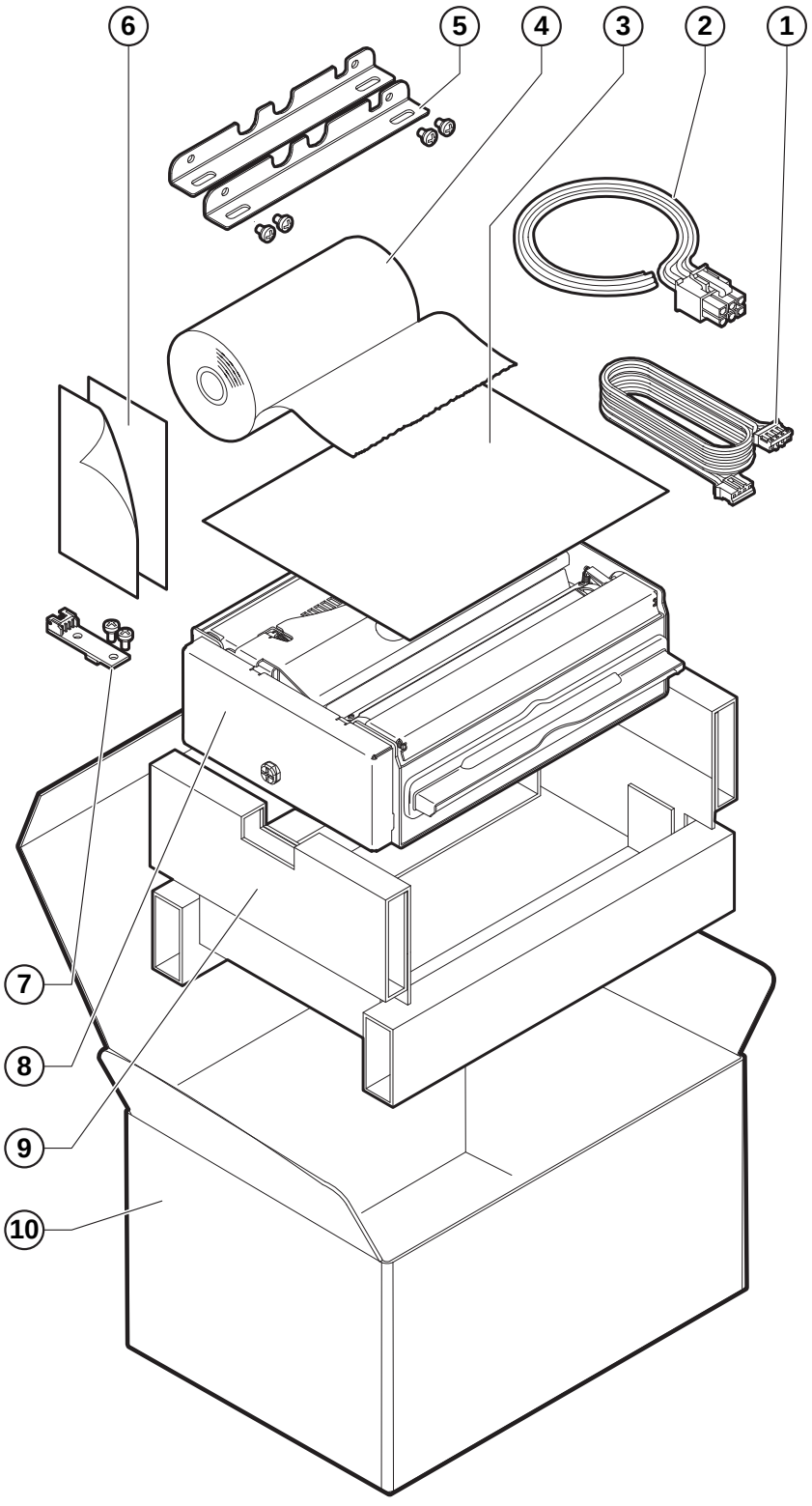
NOTE:	Gives important information or suggestions relative to the use of the printer.
ATTENTION:	Gives information that must be carefully followed to guard against damaging the printer.
DANGER:	Gives information that must be carefully followed to guard against operator injury or damage.

2 DESCRIPTION

2.1 Unpacking the device

Remove the printer from its carton being careful not to damage the packing material so that it may be re-used if the printer is to be transported in the future.
Make sure that all the components illustrated below are present and that there are no signs of damage. If there are, contact Customer Service.

1. Cable connection for near paper end sensor
2. Power supply cable
3. Upper tray
4. Paper roll (216mm)
5. Additional fixing brackets
6. Installation instructions sheet
7. External near paper end sensor
8. Printer
9. Packing frame
10. Box

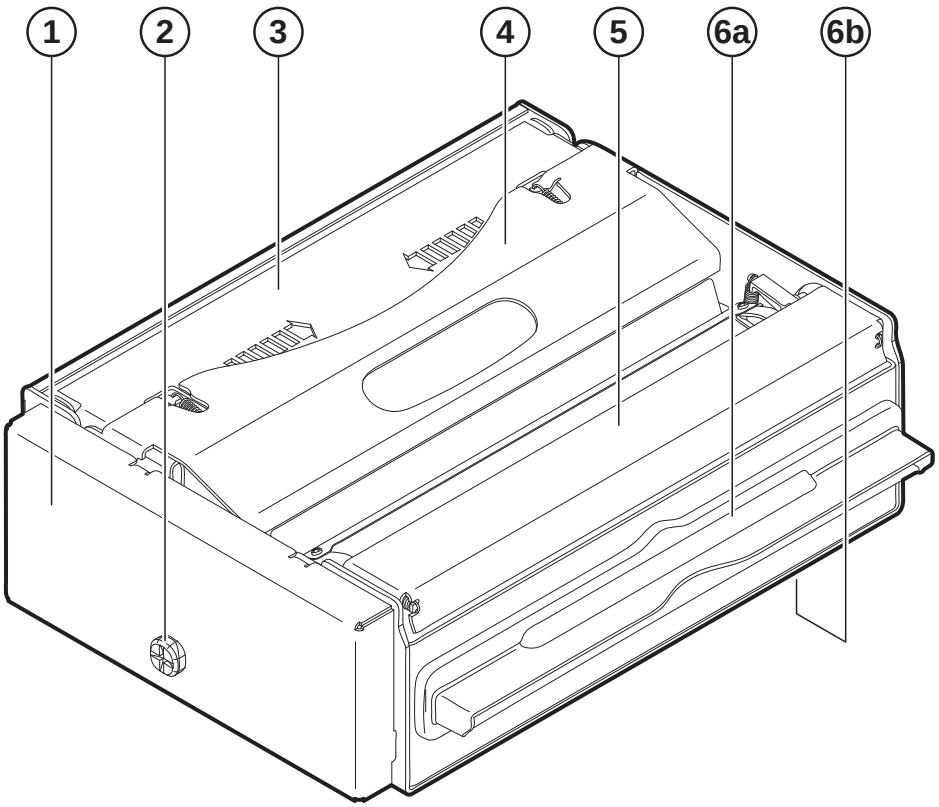


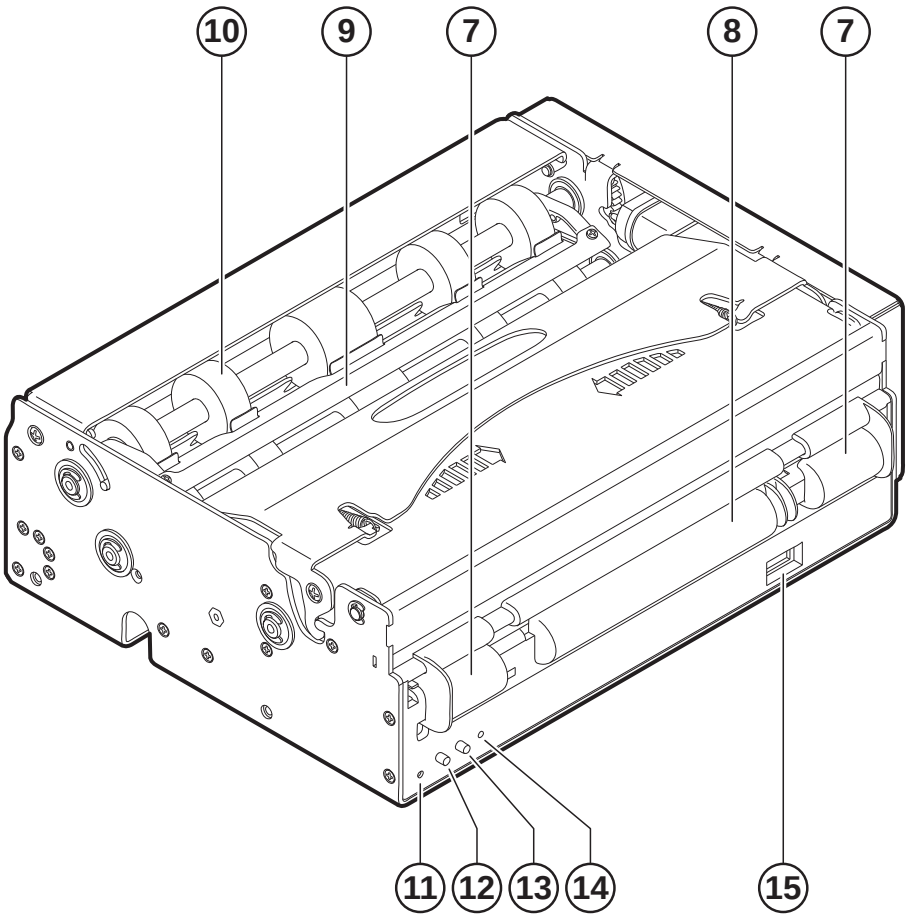
- Open the printer packaging.
- Remove the packing frame content and remove the packing frame.
- Take out the printer.
- Keep the box, trays and packing materials in the event the printer must be transported/shipped in the future.

2.2 Device components

External view

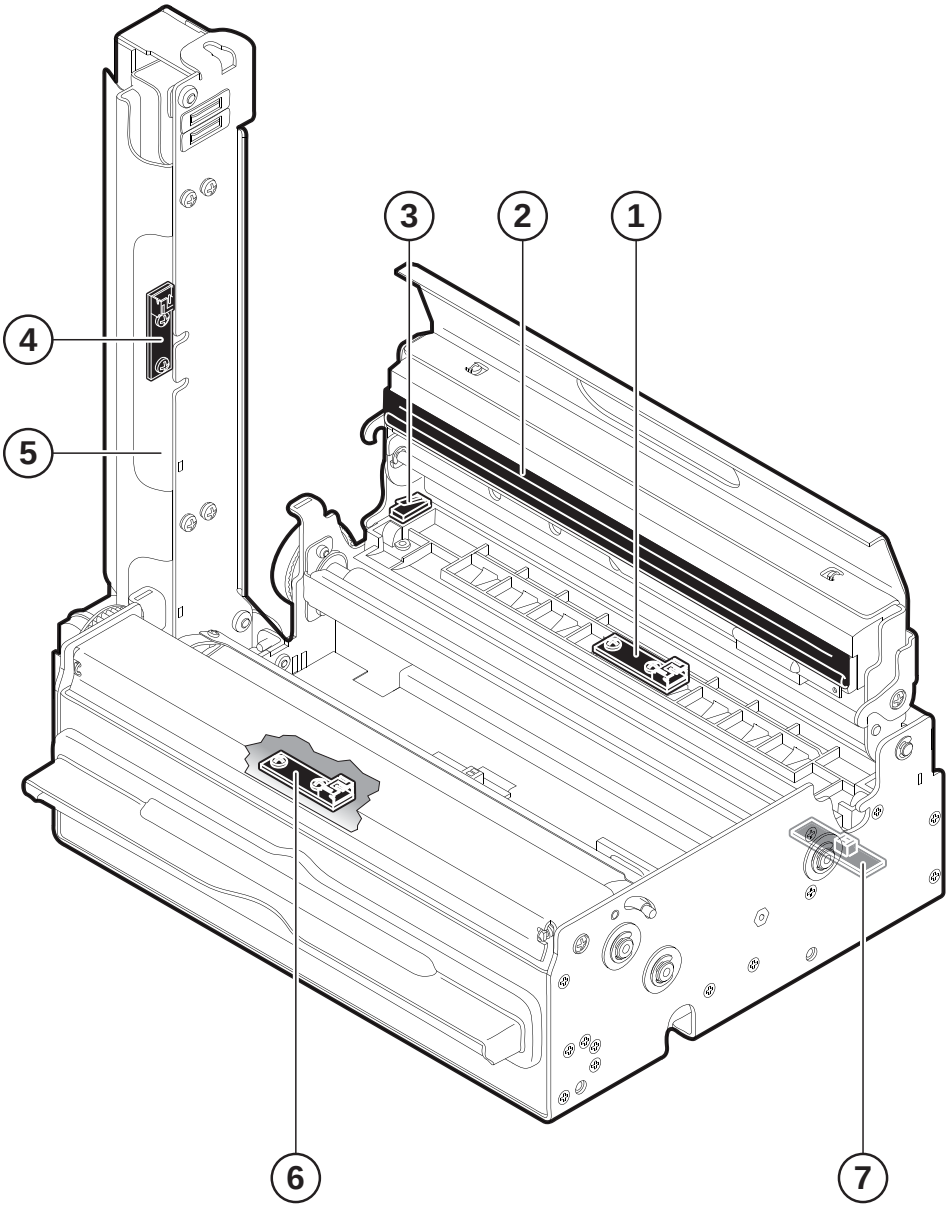
1. Motorization cover
2. Lock/Unlock button of motorization cover
3. Printing head set
4. Opening lever of head set
5. Roller cover
6. Paper out, horizontal position (a) or vertical position (b)
7. Adjustable cursor for paper in
8. Paper in
9. Tilting paper holder
10. Paper ejector rollers unit
11. Status led
12. FEED key
13. PRINT key
14. RESET key
15. External near paper end sensor connector





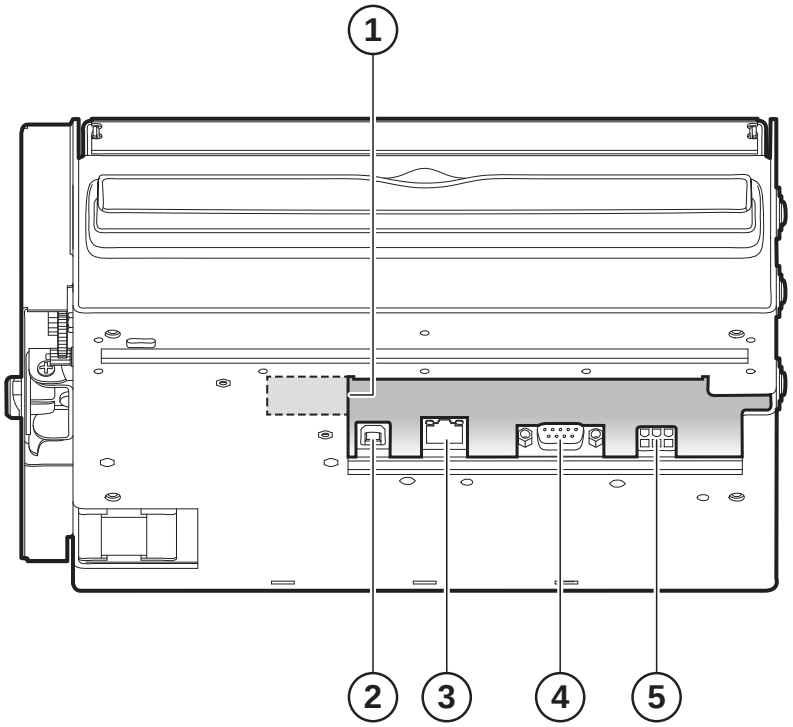
Internal view

1. ‘Paper in presence’ sensor
2. Printing head
3. ‘Printing head open’ sensor
4. ‘Paper under the cutter’ sensor
5. Cutter
6. ‘Paper out presence’ sensor
7. Sensor for notch detection



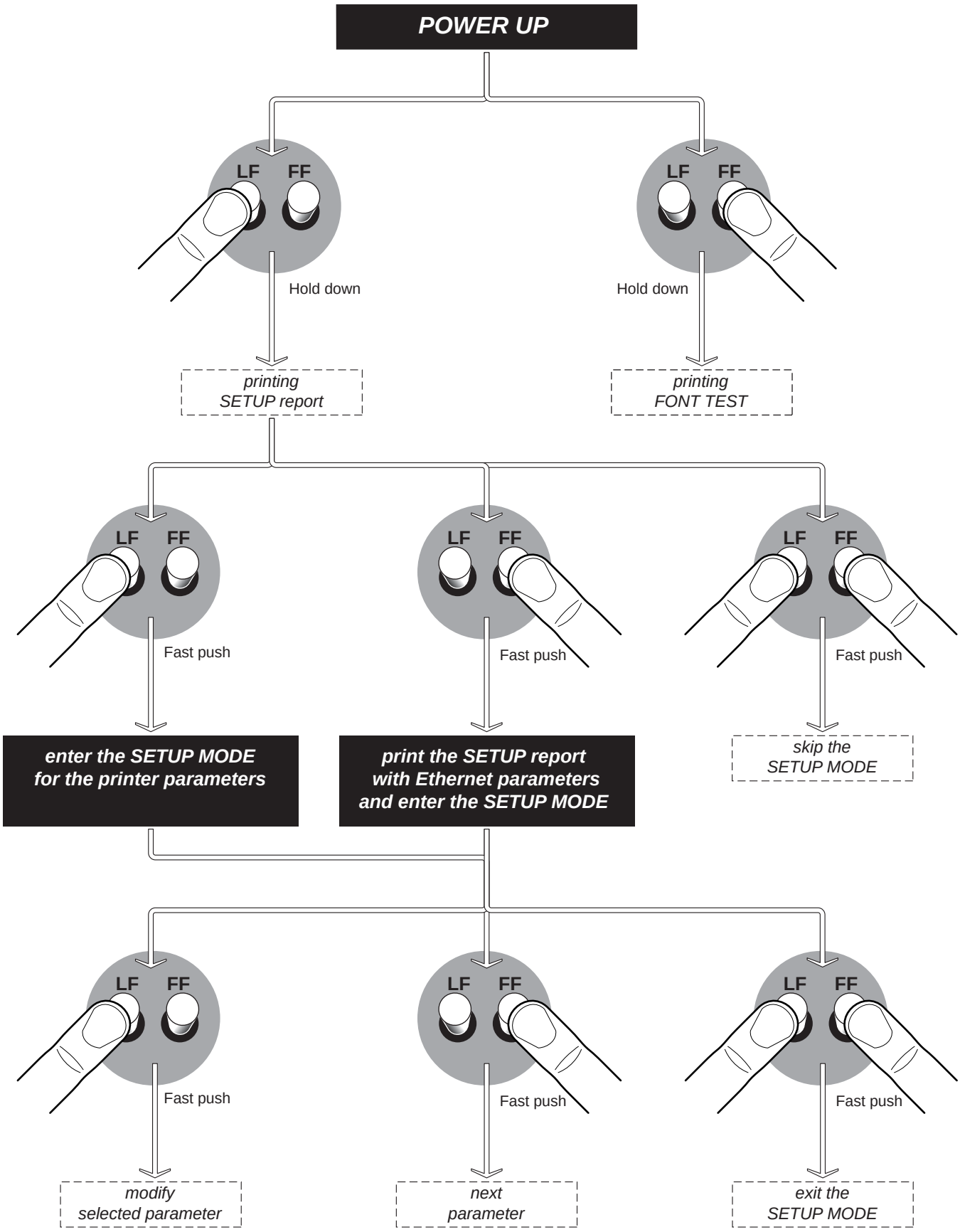
2.3 Device components: connectors view

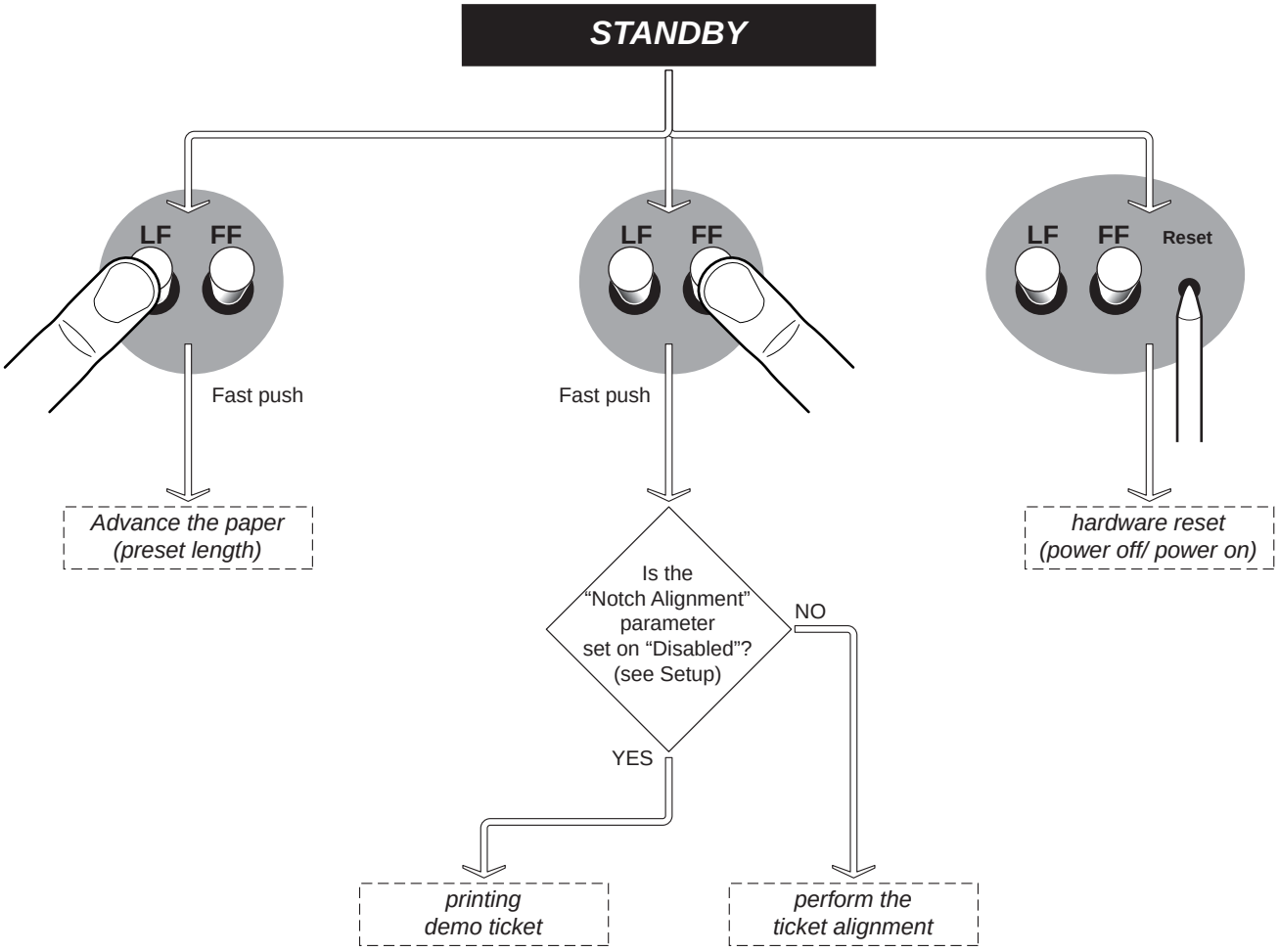
1. SD/MMC card
2. USB connector
3. ETHERNET connector
4. RS232 connector
5. Power Supply connector



2.4 Key functions

The following figures show the functions of printer's keys according to the operating condition of the device.




STANDBY
LF
FF
Fast push
Advance the paper
(preset length)
LF
FF
Fast push
Is the
"Notch Alignment"
parameter
set on "Disabled"?
(see Setup)
NO
YES
printing
demo ticket
perform the
ticket alignment
LF
FF
Reset
hardware reset
(power off/ power on)

2.5 Status led flashes

The Status led indicates hardware status of device. Given in the table below are the various led signals and the corresponding printer status.

STATUS LED			DESCRIPTION
-	○	*OFF*	PRINTER OFF
GREEN	●	*ON*	PRINTER ON: NO ERROR
GREEN COMMUNICATION STATUS	☼	*1 x*	RECEIVE DATA
		2 x	RECEPTION ERRORS (PARITY, FRAME ERROR, OVERRUN ERROR)
		3 x	COMMAND NOT RECOGNIZED
		4 x	COMMAND RECEPTION TIME OUT
YELLOW RECOVERABLE ERROR	☼	*2 x*	HEADING OVER TEMPERATURE
		3 x	PAPER END
		4 x	PAPER JAM
		5 x	POWER SUPPLY VOLTAGE INCORRECT
		6 x	COVER OPEN
RED UNRECOVERABLE ERROR	☼	*3 x*	RAM ERROR
		4 x	EEPROM ERROR
		5 x	CUTTER ERROR
		6 x	CUTTER OPEN

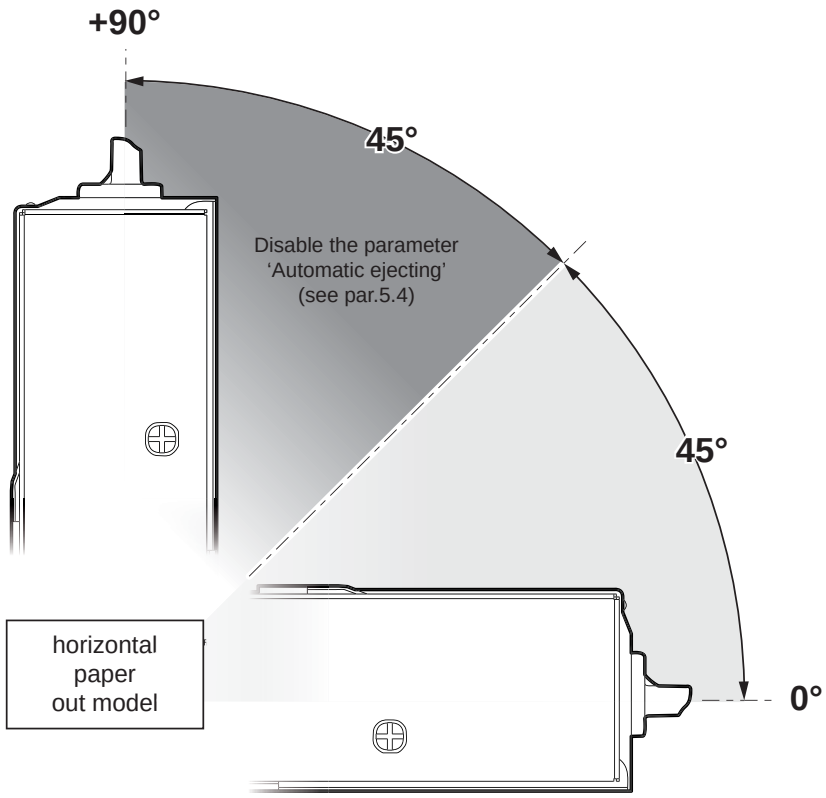
3 INSTALLATION

3.1 Mounting specifications

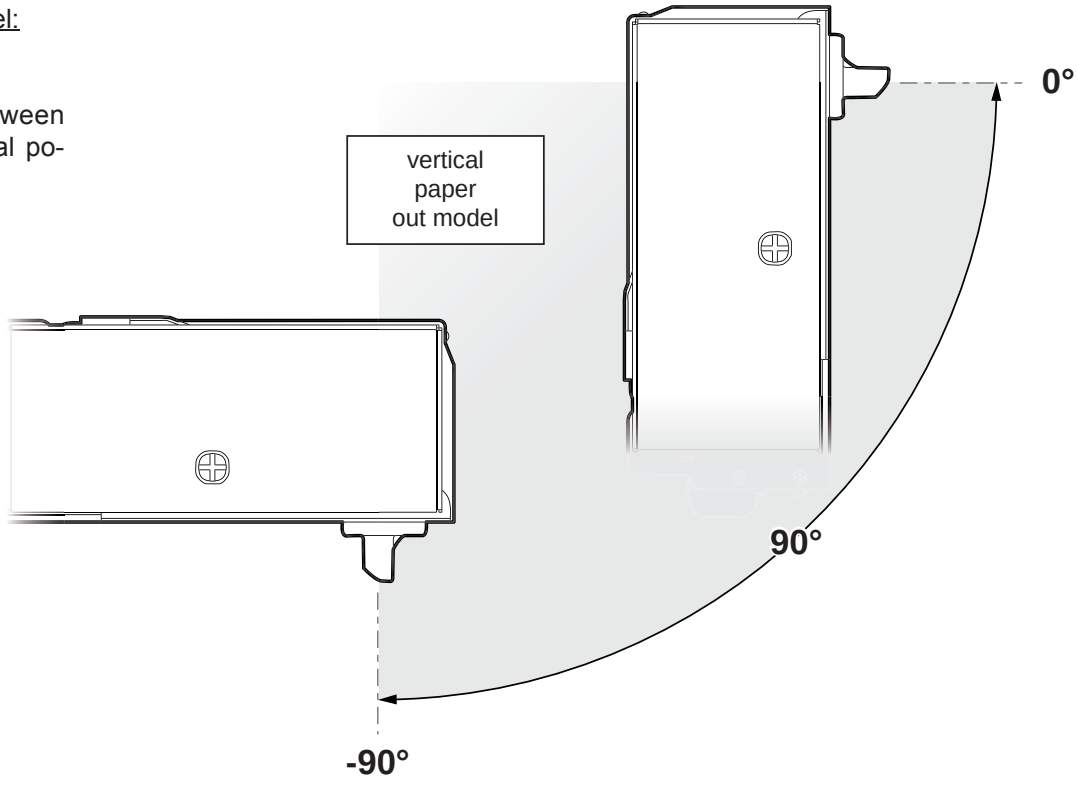
The printer is designed for the following positions:

WARNING
Respect the mounting specifications to guarantee the right ticket emission.

Horizontal paper out model:
- Horizontal (0°)
- Vertical (+90°)
- All the positions between horizontal and vertical positions.

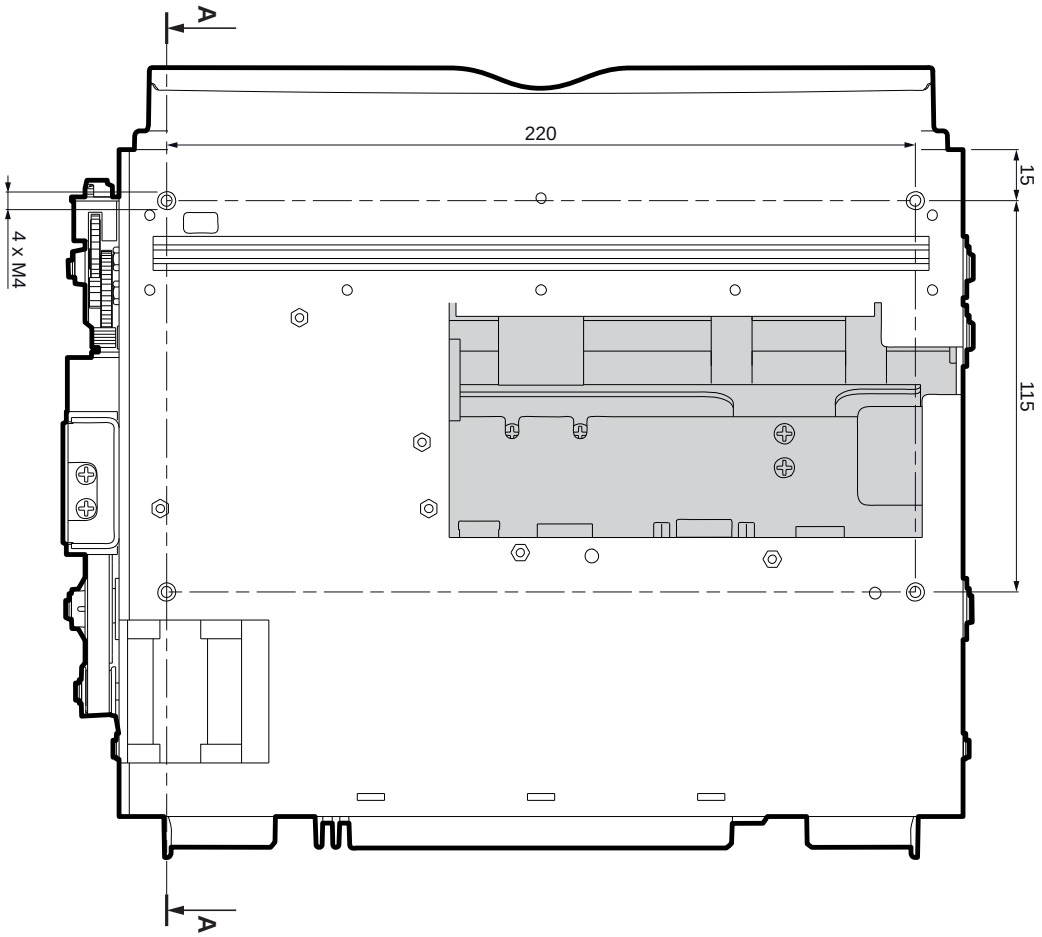


Vertical paper out model:
- Horizontal (0°)
- Vertical (-90°)
- All the positions between horizontal and vertical positions.

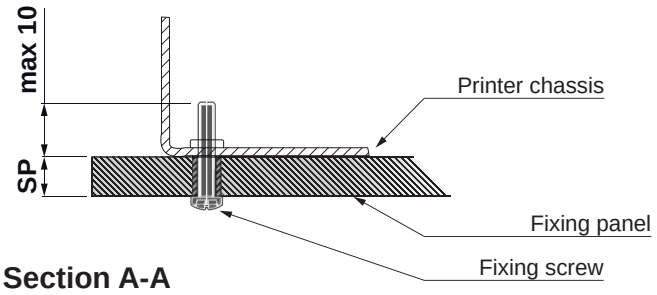


3.2 Fastening (horizontal paper out only)

The printer is provided with three fixing holes on the bottom of device (see following figure). To fasten the printer on a panel, use three M4 screws



It's very important to consider the screws length to not damage the internal components placed near the fixing holes (see following figure).



Section A-A

The screw length (L) will be calculated according to the thickness of the panel (SP) on which the printer is fixed, as follows

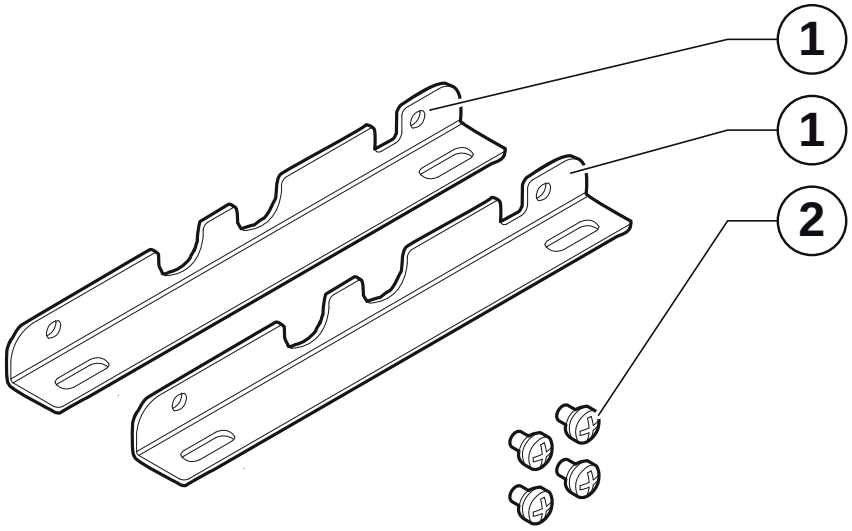
$$L \leq 10mm + Sp$$

For example, if panel thickness is 10mm (Sp = 10mm) the max screw length will be 20mm.

3.3 Fixing brackets

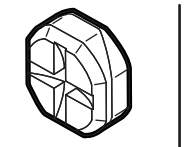
The printer includes a kit for the assembly of two additional fixing brackets (see following figure).

The kit contains:
1. Two fixing brackets;
2. No.4 fixing screws.

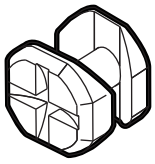


For the assembly procedure, proceed as follows:

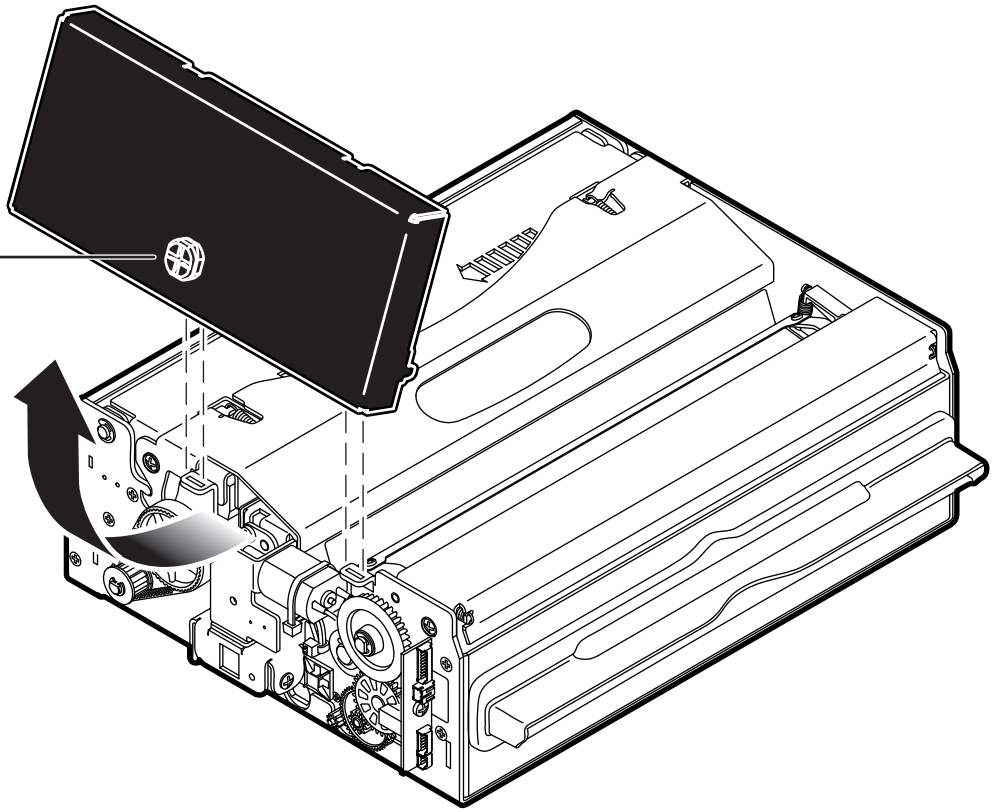
1



BUTTON IN LOCKED POSITION

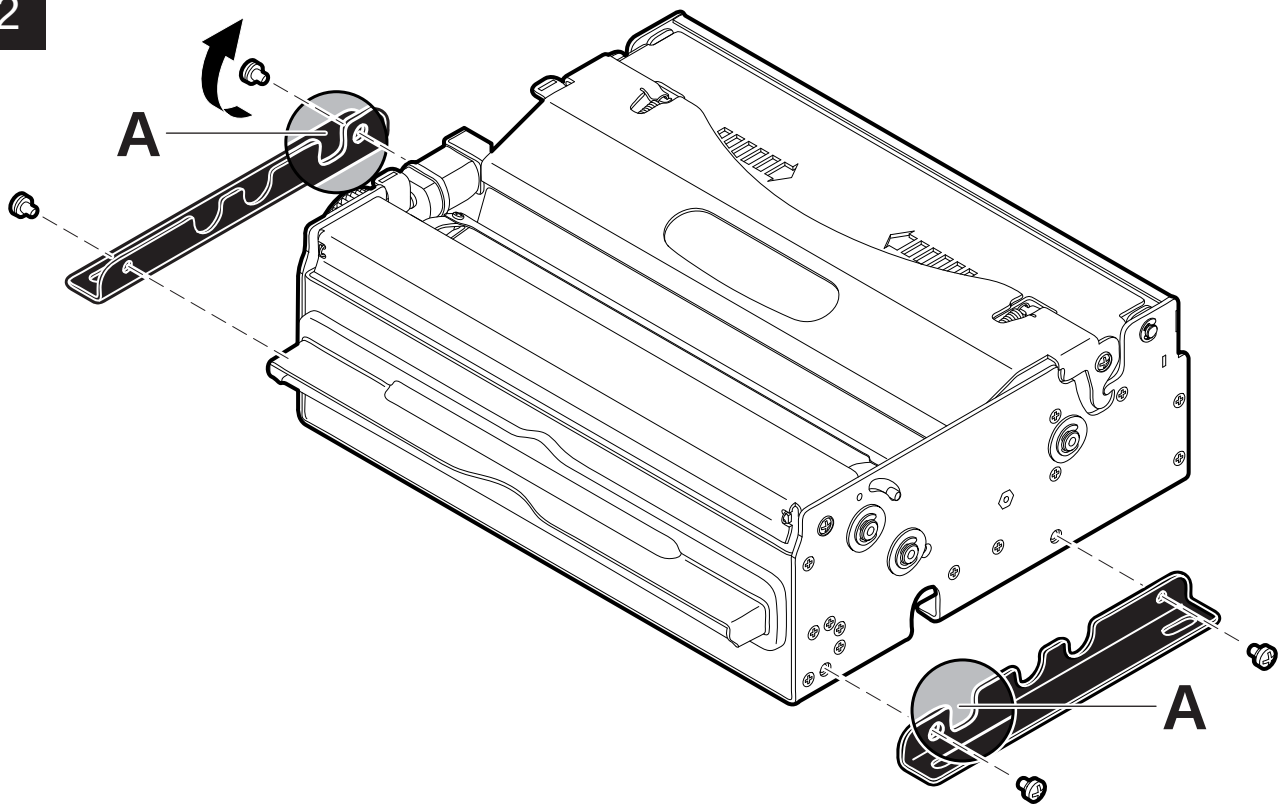


BUTTON IN UNLOCKED POSITION



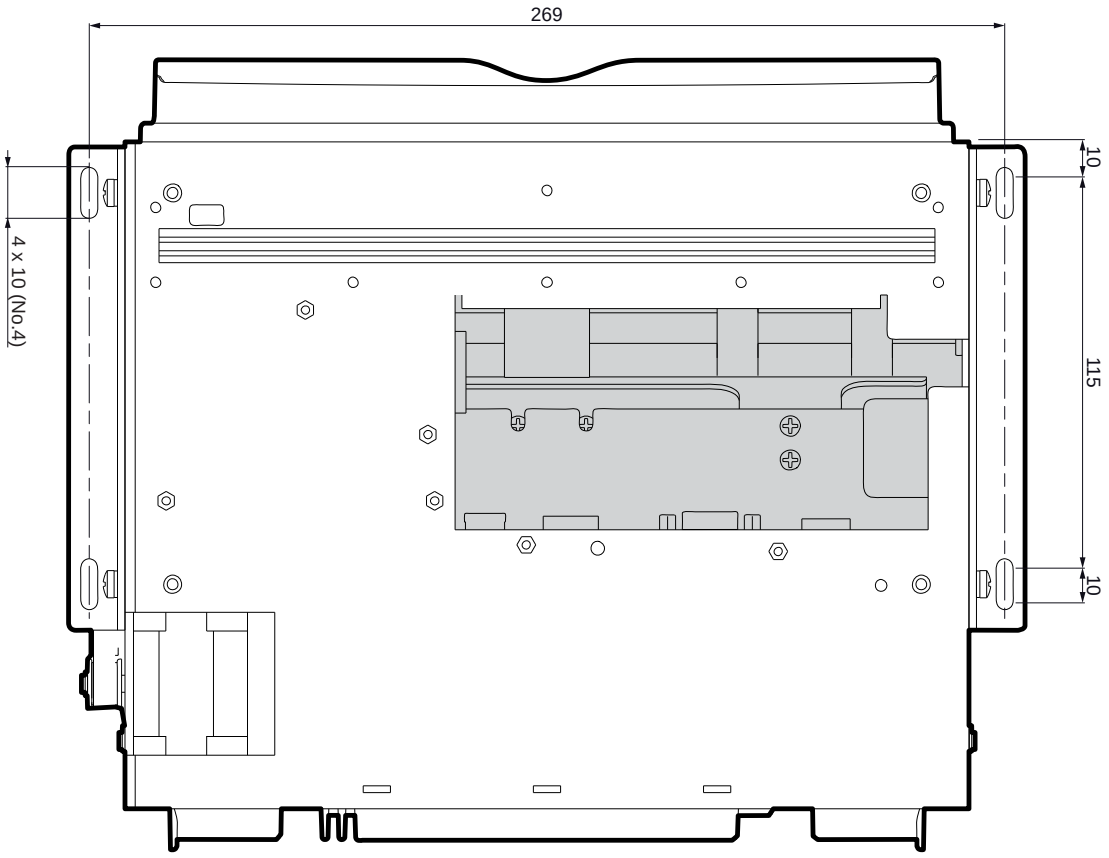
Remove the side cover by rotating the lock/unlock.

2



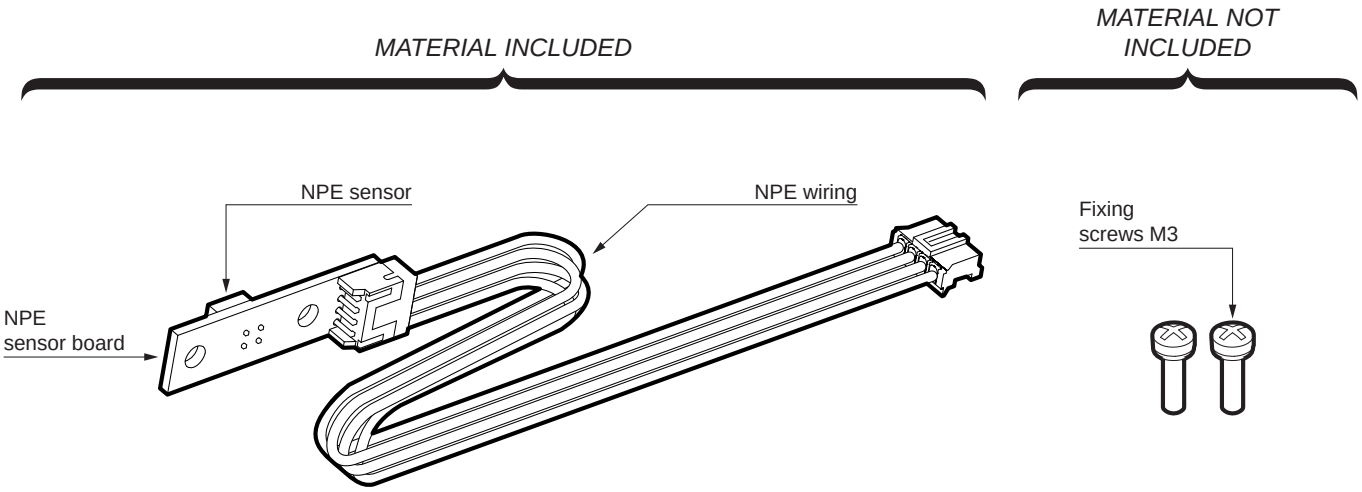
Fix the brackets as shown in Fig.
Observe the orientation of the slot A.

The following figure shows the printer overall dimensions with the two additional brackets (dimensions in mm).



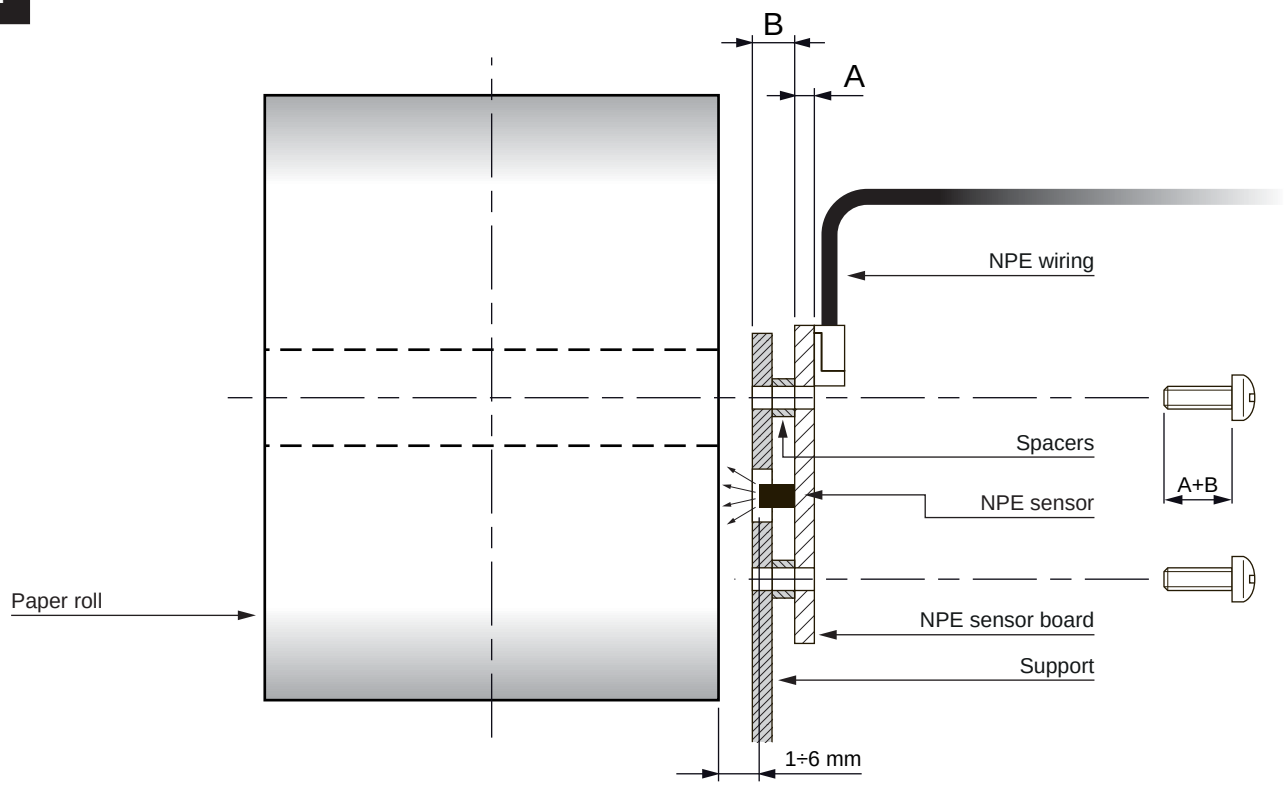
3.4 Near paper end sensor

The printer includes a near paper end sensor with wiring (see following figure). To fix the sensor use two M3 screws not supplied.



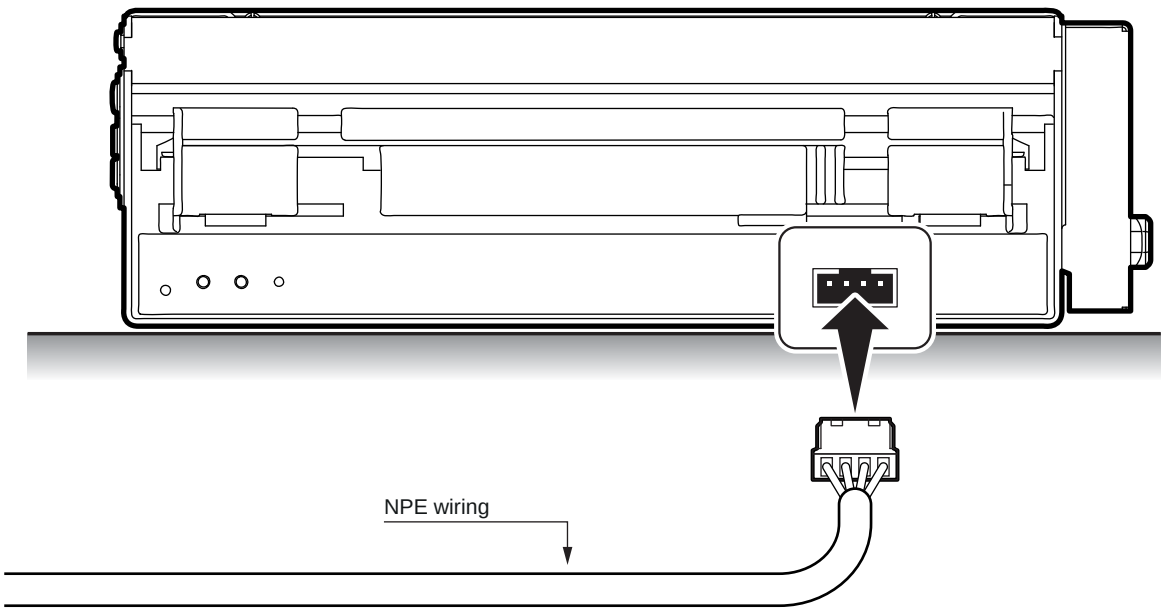
For the assembly procedure, proceed as follows:

1



Fix the near paper end sensor board to the support using two M3 screws not included.
For the correct functioning of the near paper end sensor, comply with the measures specified

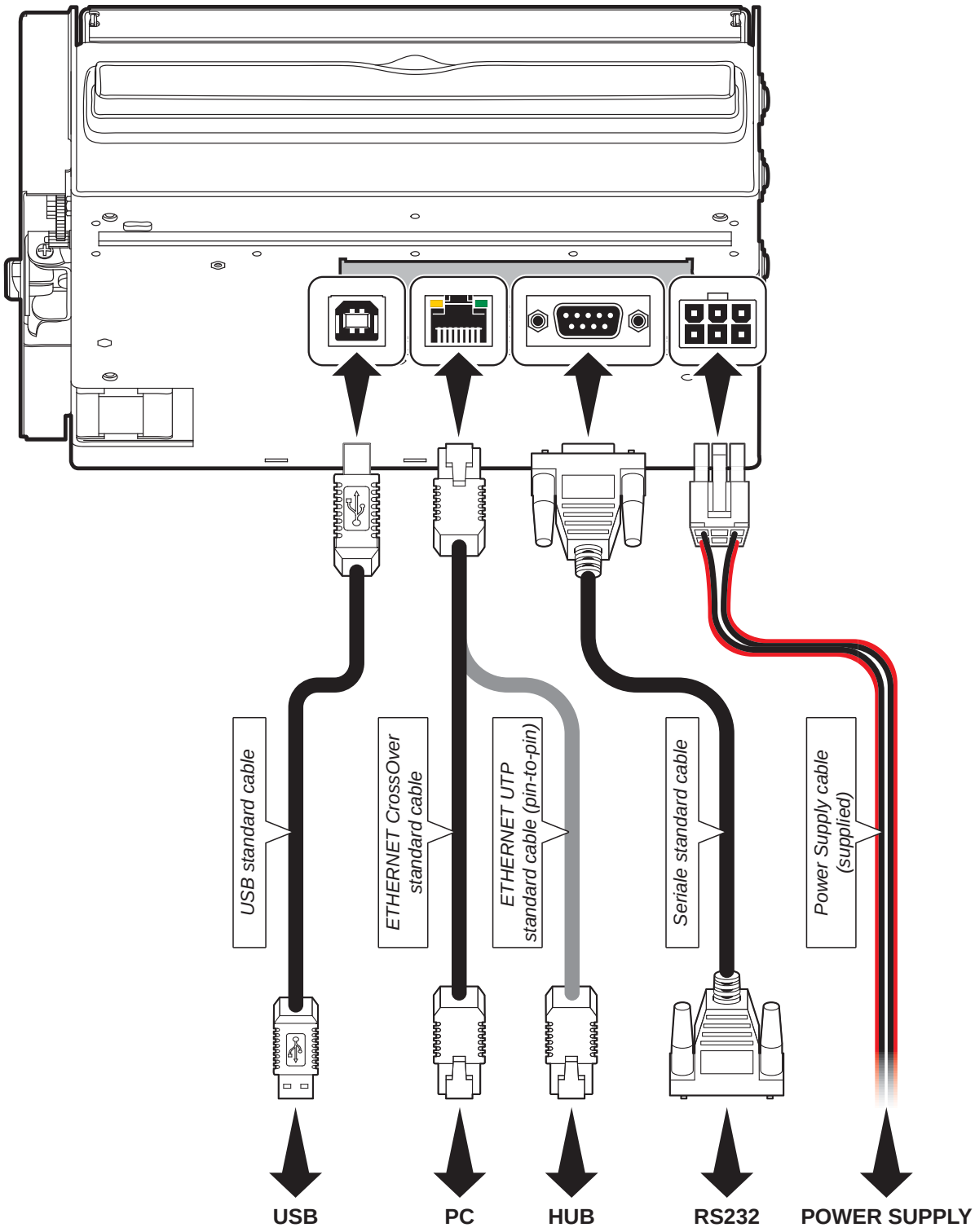
2



Connect the wiring coming from the near paper end sensor board
at the connector shown in figure

3.5 Connections for Ethernet model

The following figure shows the possible connections for device.



ATTENTION:
In some using conditions, we recommend the installation of a ferrite core on the power supply cable.

3.6 Pinout

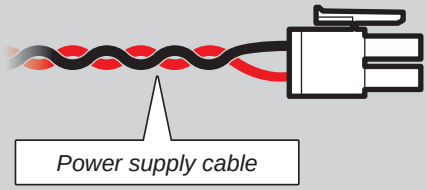
POWER SUPPLY

Male Molex connector vertical (no. 39-30-0060)

J19	1	+24 Vdc
	2	+24 Vdc
	3	+24 Vdc
	4	GND
	5	GND
	6	GND

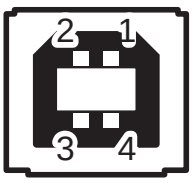
ATTENTION:
Respect power supply polarity.

Nota: ***Power supply cable***
The following figure shows the connector pinout of the power supply cable for the device:



Female connector
Molex (n.39-01-2065)

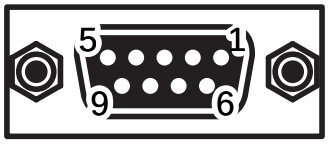
PIN	*Cable color*	*Signal*
1	*Red*	*+24V*
2	*not connected*	*+24V*
3	*Red*	*+24V*
4	*Black*	*GND*
5	*not connected*	*GND*
6	*Black*	*GND*



USB INTERFACE

Female USB type B connector

J4	1	USB0-VBUS	(in)
	2	D0 -	(in/out)
	3	D0 +	(in/out)
	4	GND	
	SH1	SHIELD	
	SH2	SHIELD	



RS232 SERIAL INTERFACE

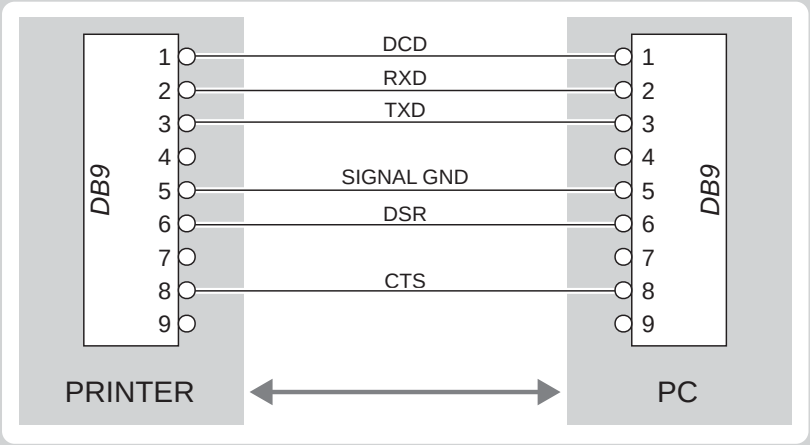
Female DB9 connector

J5	1	DTR	
	2	TX	During transmission, takes the values “0” and “1” depending on data.
	3	RX	During reception, takes the values “0” and “1” depending on data.
	4	n.c.	
	5	GND	
	6	DTR	When “1”, printer is power on.
	7	CTS	
	8	RTS	When “1”, printer is ready to receive data
	9	n.c.	

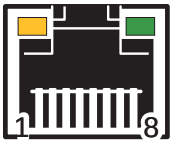
Note: Given the presence of the RS232 standard, logic value “0” corresponds to a voltage level of between +3Vdc and +15Vdc and logic value “1” corresponds to a voltage level of between -3Vdc and -15Vdc.

Note: ***KPM216HII ETH > PC connection***

The following pictures shows an example of connections between the printer and a personal computer using a 9 pin female RS232 serial connectors:



Note: When use a serial cable, we recommend the installation of a ferrite core on the power supply cable.



ETHERNET INTERFACE

Female RJ45 connector

J3	1	TPOUT +
	2	TPOUT -
	3	TPIN +
	4	GND
	5	GND
	6	TPIN -
	7	n.c
	8	n.c
	9	+3.3 V
	10	LED-LAN
	11	+3.3 V
	12	LED-LNK
	13	Shield
	14	Shield

Note:
The functionality of two led are specified in the following table:

LED	FUNCTION
LED-LNK	Link (yellow color): the led lights up when a connection is active
LED-LAN	Rx/Tx: (green color): the led lights up when occurs a data reception or transmission

- To directly connect the printer to a Personal Computer, use a Cross-Over Ethernet cable.
- To connect the printer to a hub device, use an UTP Ethernet cable (Pin to Pin).

Note: The pinout shown in table represents the input signals to component J15 before the isolation voltage transformer (through-hole pin).

3.7 Driver

The drivers are available for the following operating system:

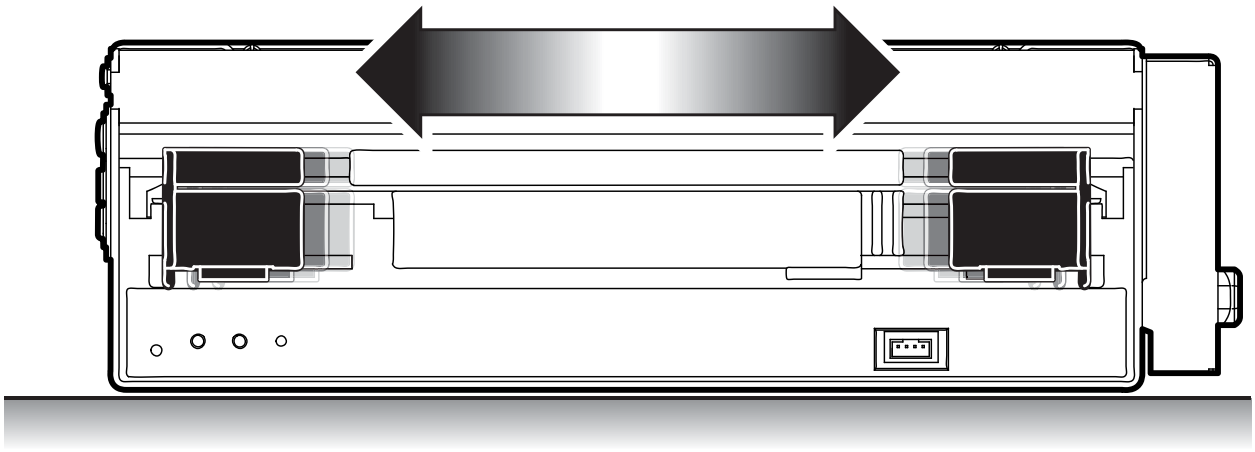
OPERATING SYSTEM	DRIVER	INSTALLATION PROCEDURE
Windows	Windows XP Windows VISTA (32/64bit) Windows 7 (32/64bit)	From the START menu, press Enter and key-in the path where the SW was saved on your PC, then click OK. Follow the instructions that appear on the screen to install the driver.
Linux		Follow the instruction get back on the README.TXT file you can find it in the software package downloaded in advance.

All drivers can be found in the DOWNLOAD section of the web site www.custom.biz.

4 OPERATION

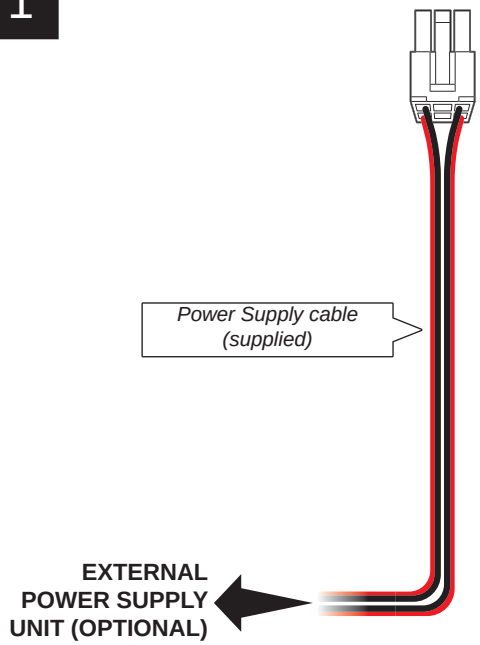
4.1 Adjusting paper width

Paper width may be adjusted from 194mm to 216mm by moving the mobile paper guides as shown in the following figure.



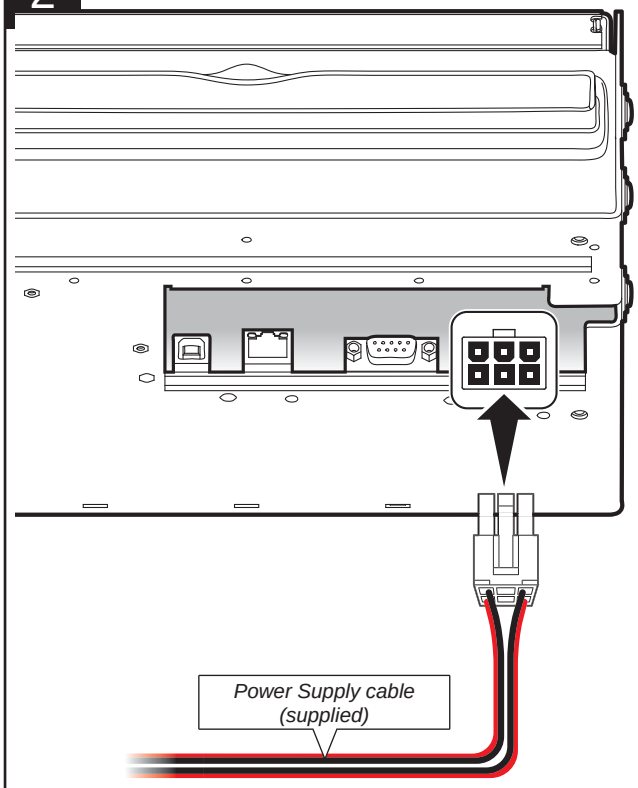
4.2 Turning on the device

1



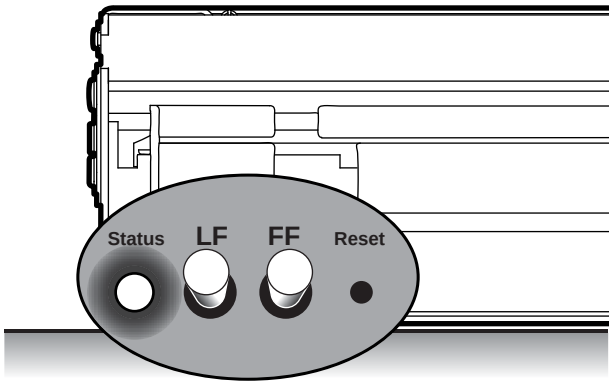
Connect the power supply cable (supplied)
to an external power supply unit (optional).

2



Connect the power supply cable
to the connector of the printer (see par.3.6).

3

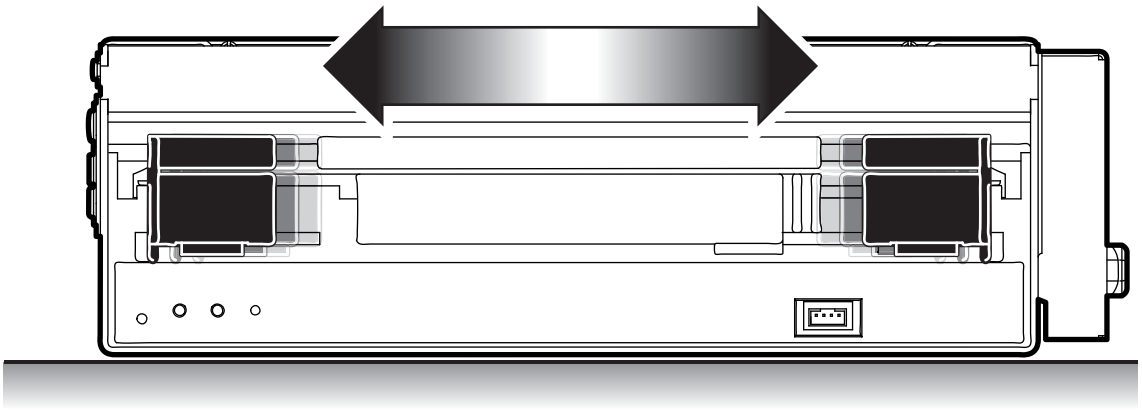


The green led turns on
and the printer is ready.

4.3 Paper insertion

Each time you change the paper, check inside the printer. To change the paper proceed as follows:

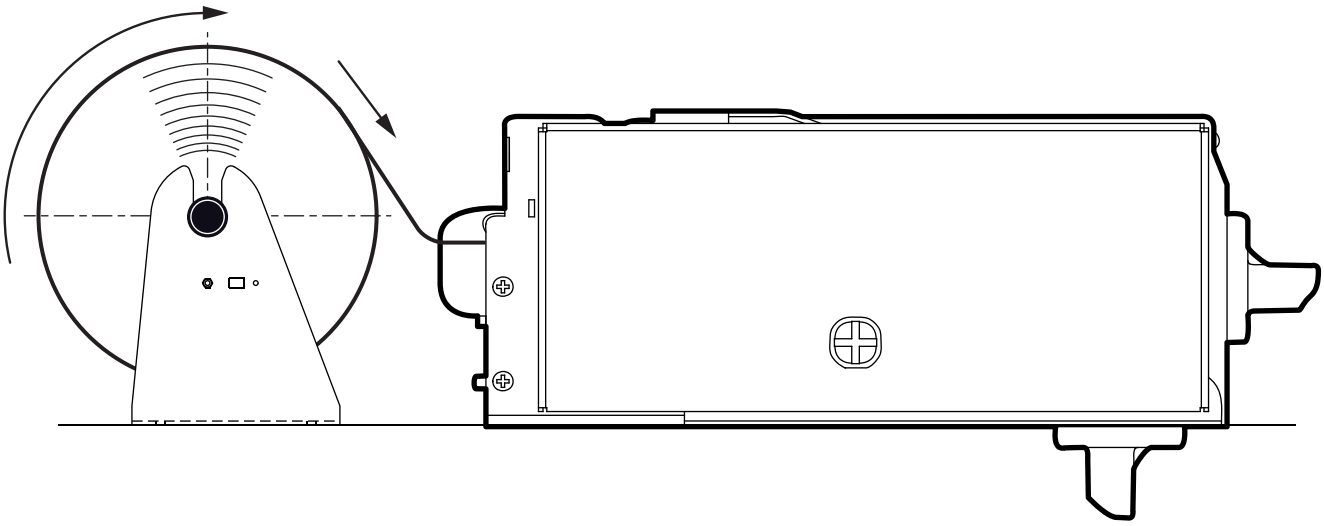
1



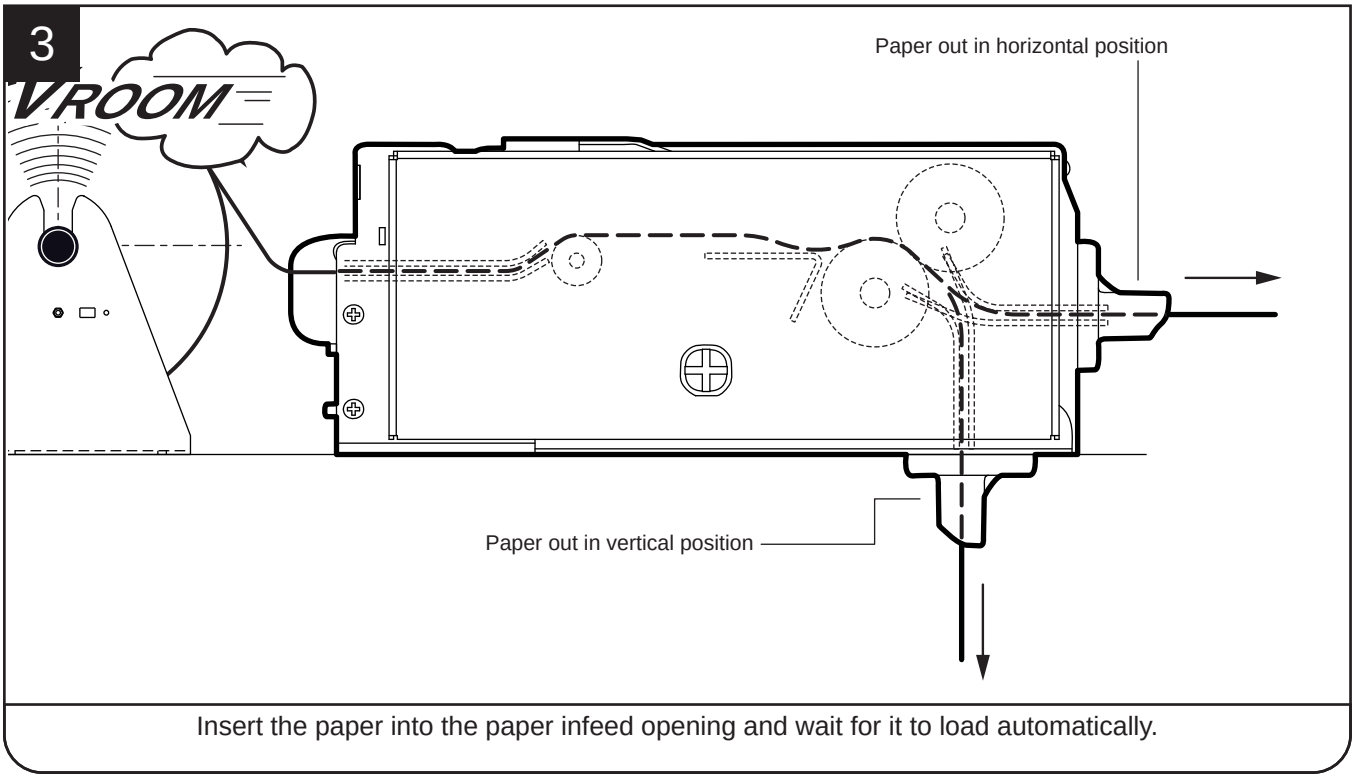
Adjust the paper width (see previous paragraphs).

2

ATTENTION:
Make sure the cut is straight.

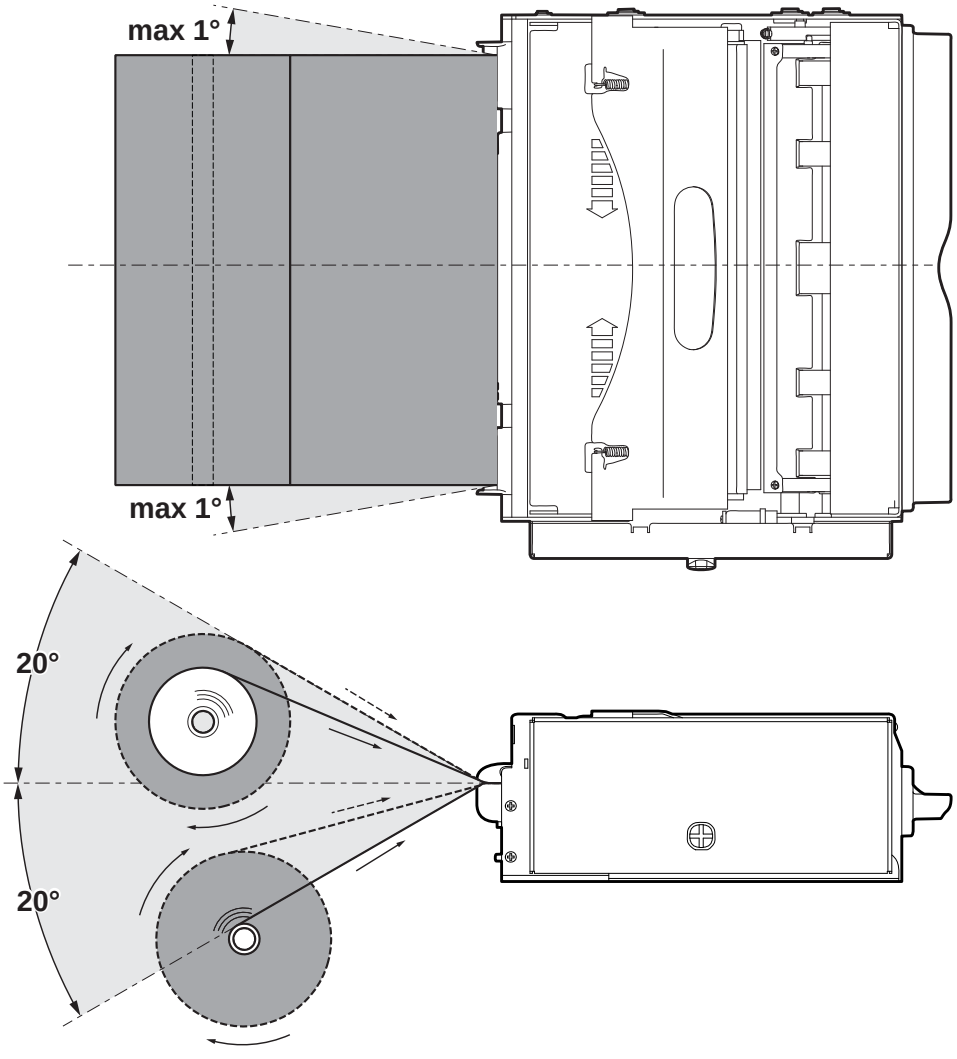


Place the paper roll, so that it unrolls in the direction shown in figure.



Insert the paper into the paper infeed opening and wait for it to load automatically.

The following figure gives the limit positions of the paper roll related to the printer for a correct paper loading without a paper roll holder support.
The direction of the paper will always form a maximum angle of 20 ° or -20 ° with the insertion plane of paper inside the printer.



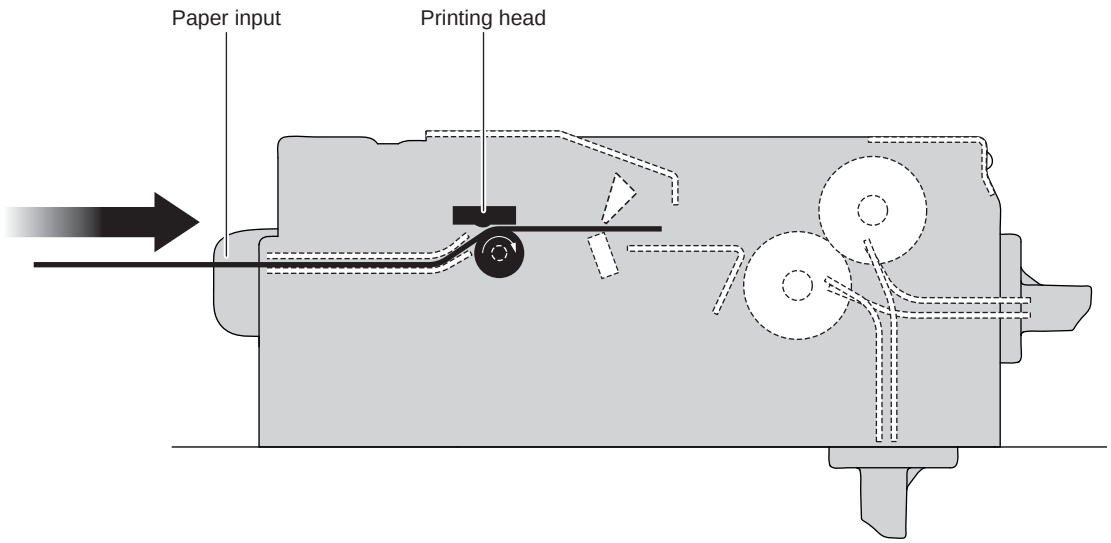
4.4 Issuing ticket

The printer allows you to choose between different operating modes for the issuance of printed tickets.
The operating modes shown in the following images, depend on the settings of the configuration parameters and commands sent to the printer.

NOTE: For further information, refer to Chapter 5 and to the Commands Manual.

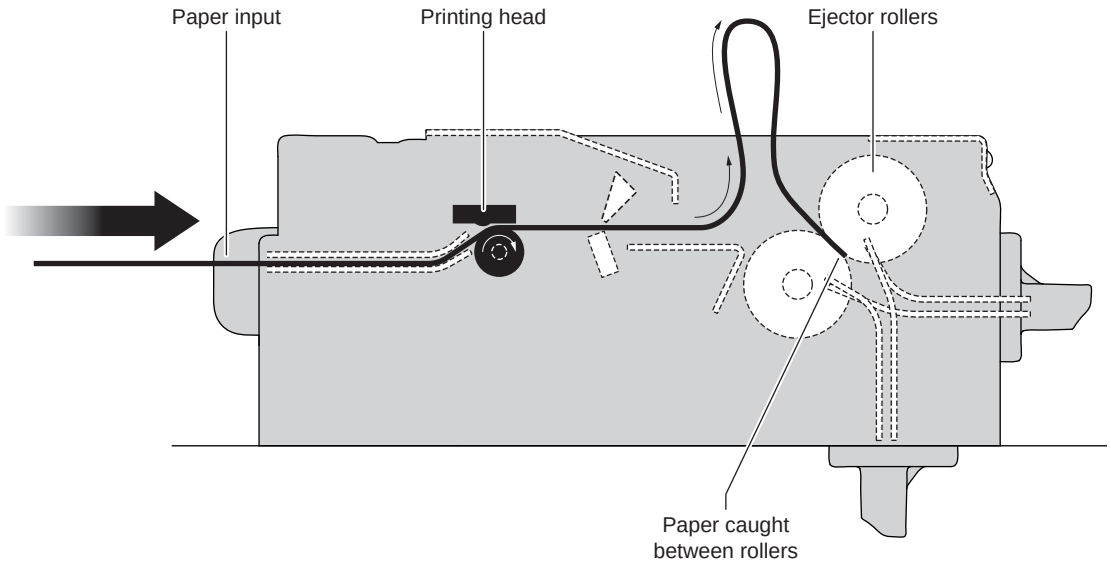
"PRESENT" MODE

1



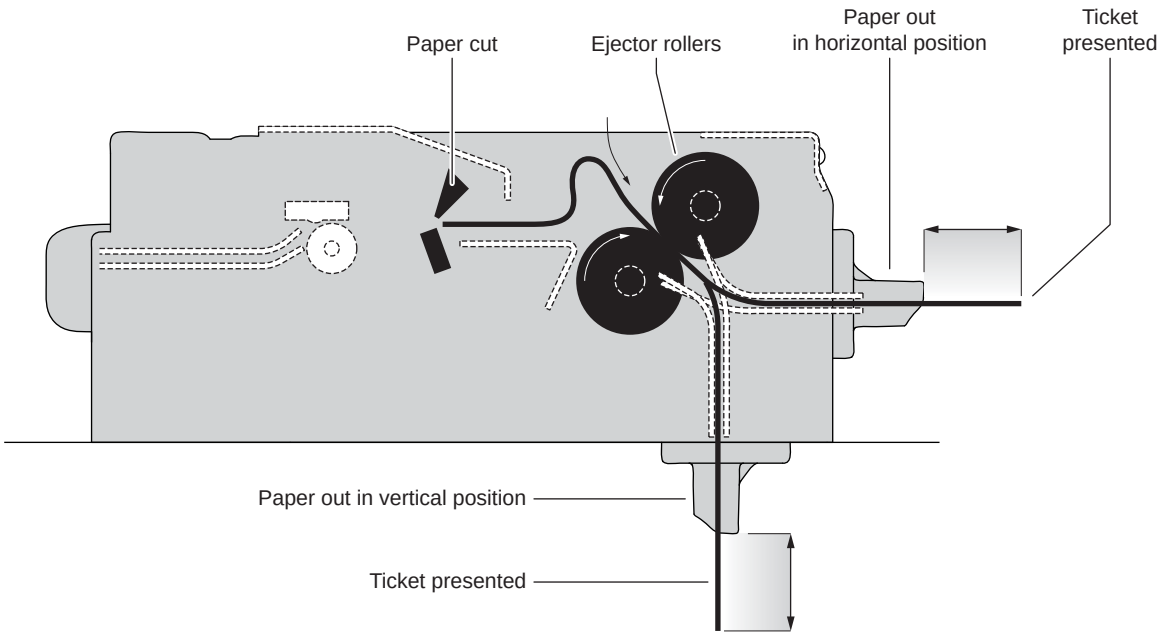
The device starts the ticket printing

2



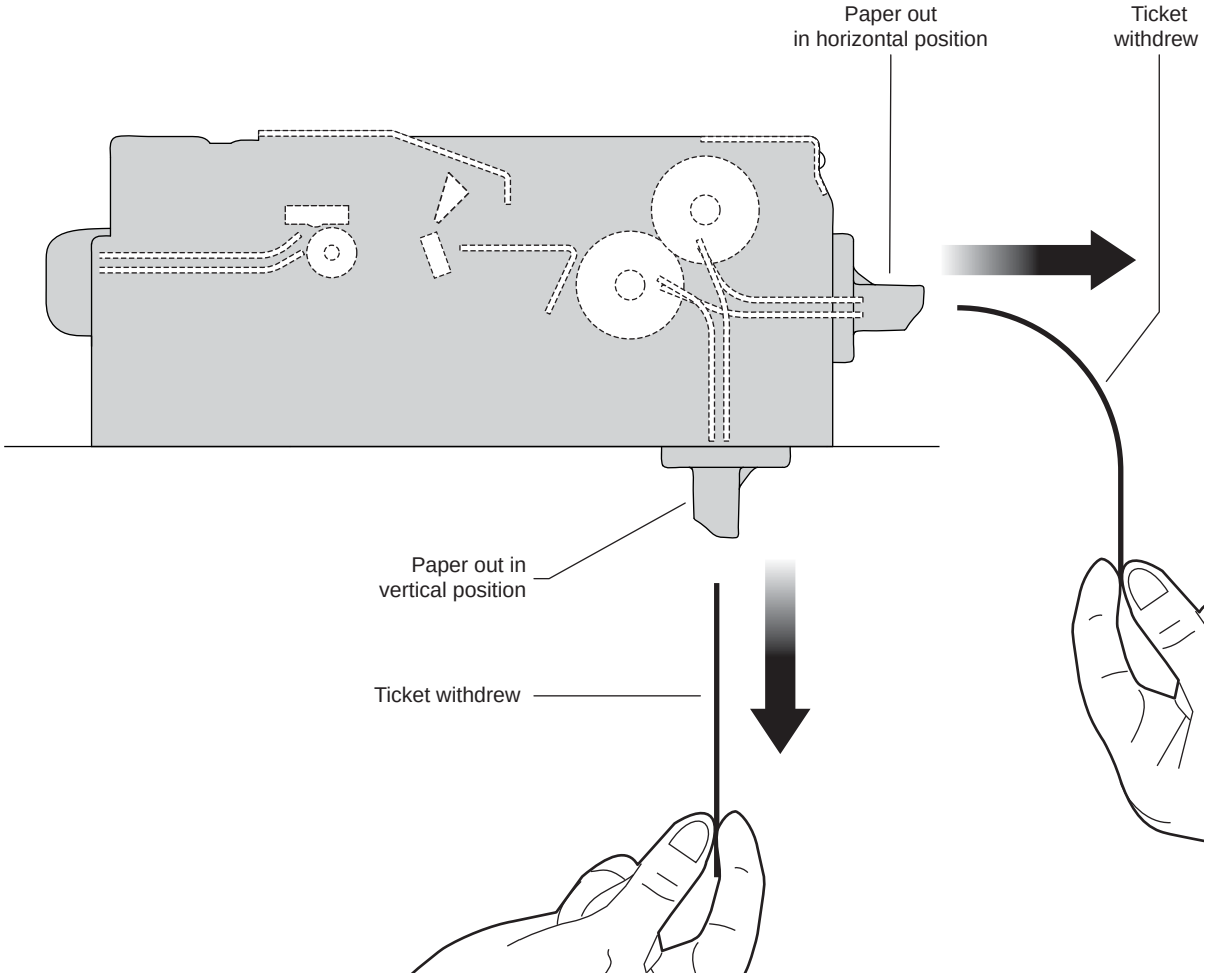
The ticket advances ahead to the ejector and is caught between the ejector rollers.
The printed part of ticket is collected while the device continues printing

3



When printing ends, the device cuts the ticket and
presents a portion of the ticket printed on the paper mouth

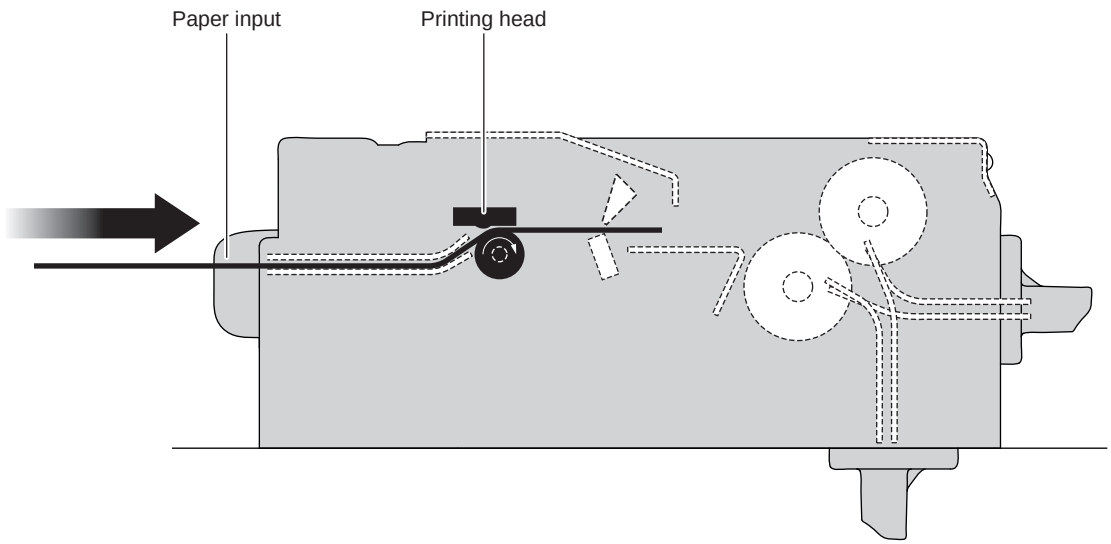
4



The user withdraw the ticket from the paper mouth

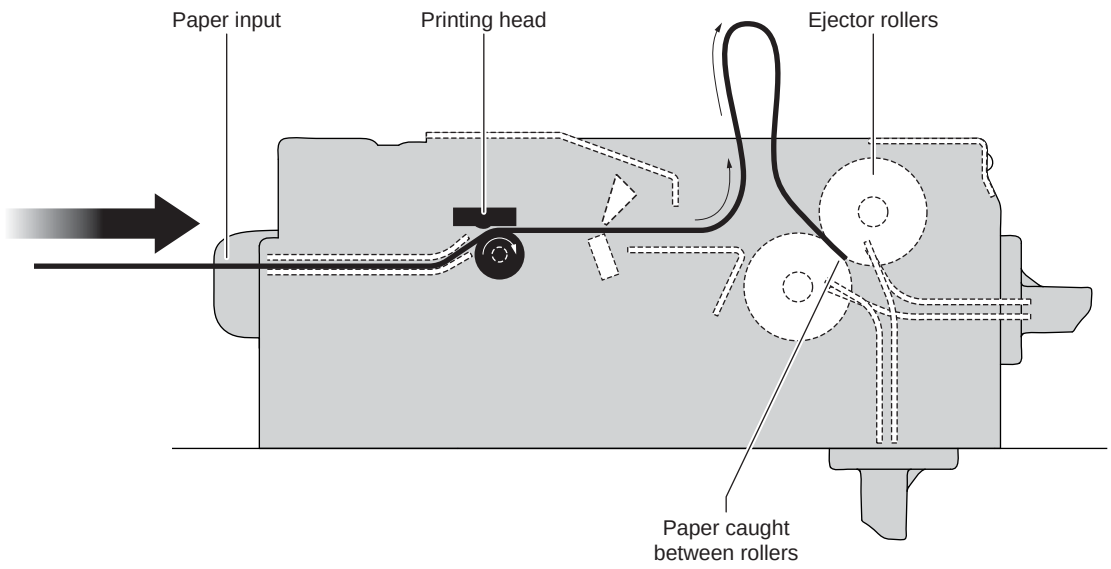
“EJECT” MODE

1



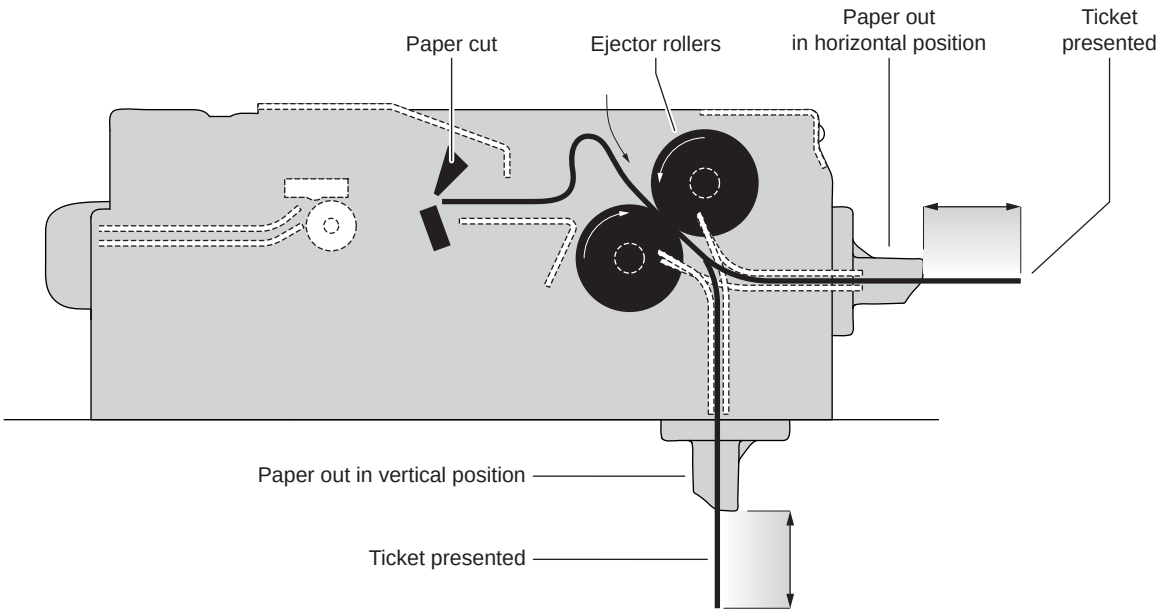
The device starts the ticket printing

2



The ticket advances ahead to the ejector and is caught between the ejector rollers.
The printed part of ticket is collected while the device continues printing

3

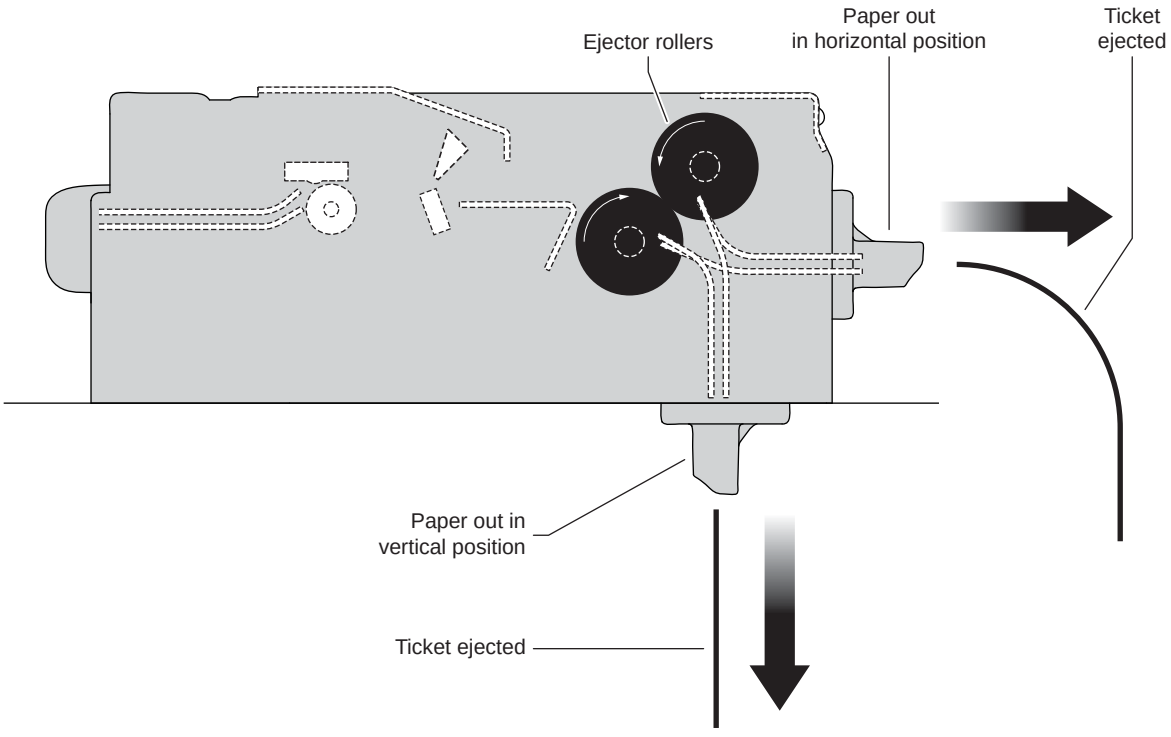


When printing ends, the device cuts the ticket and
presents a portion of the ticket printed on the paper mouth

4

The ticket is waiting on the paper mouth for a preset period of time

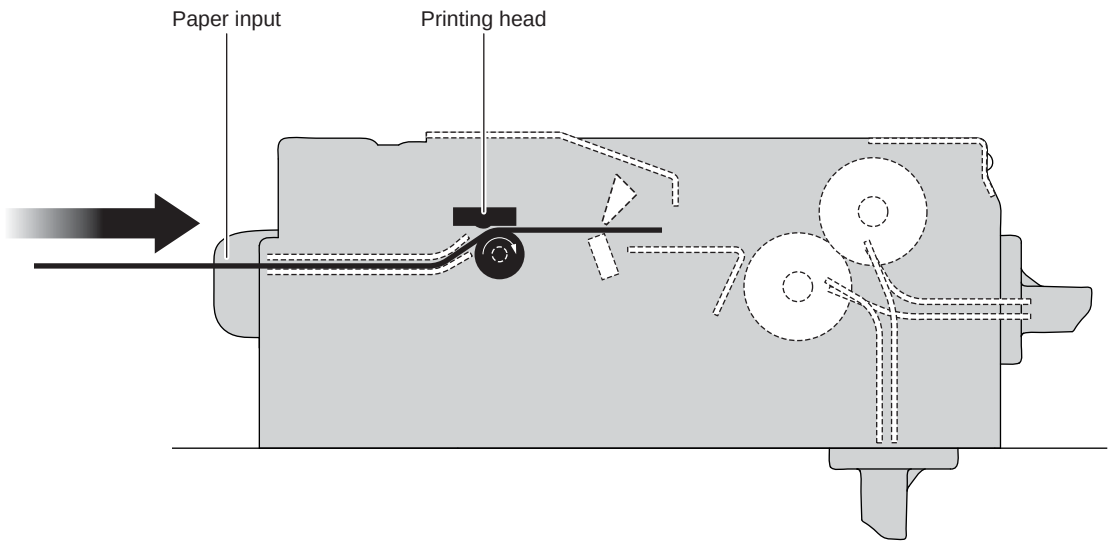
4



The device ejects the ticket
(horizontally or vertically depending on the model used)

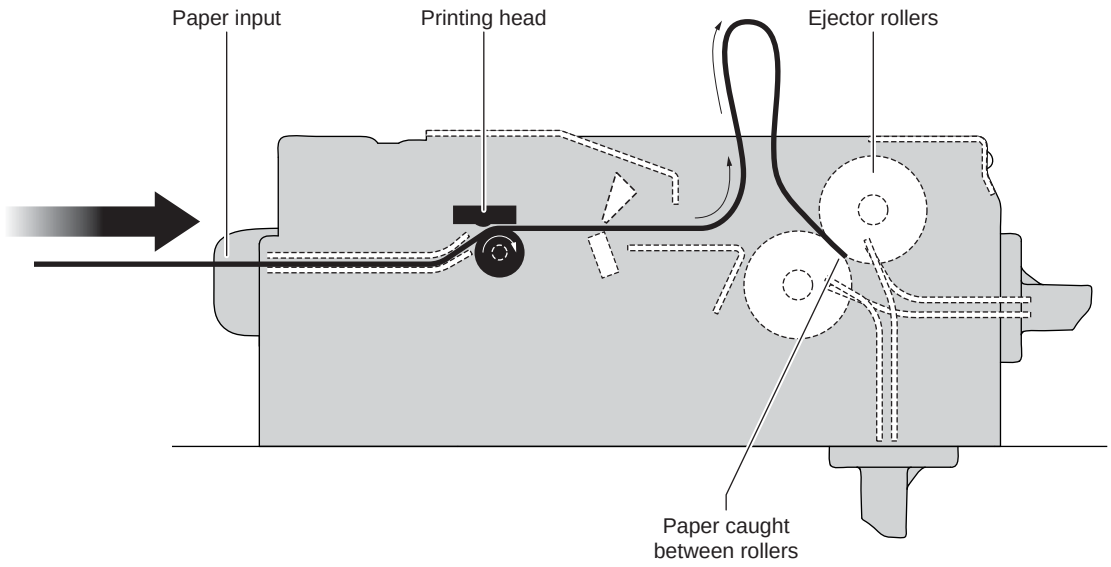
“RETRACT” MODE

1



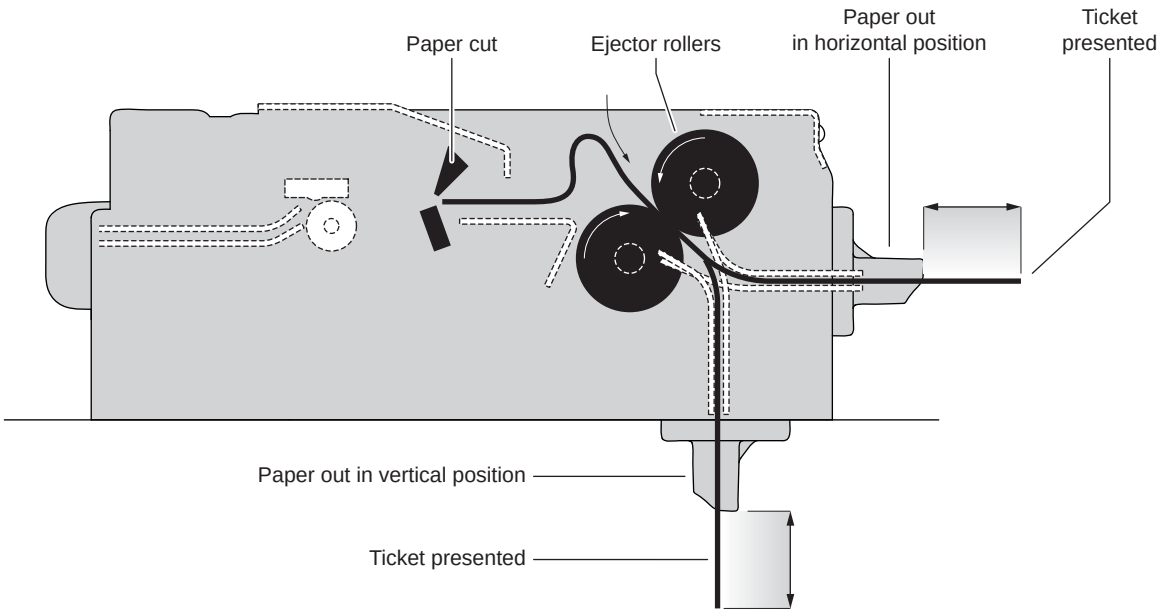
The device starts the ticket printing

2



The ticket advances ahead to the ejector and is caught between the ejector rollers.
The printed part of ticket is collected while the device continues printing

3

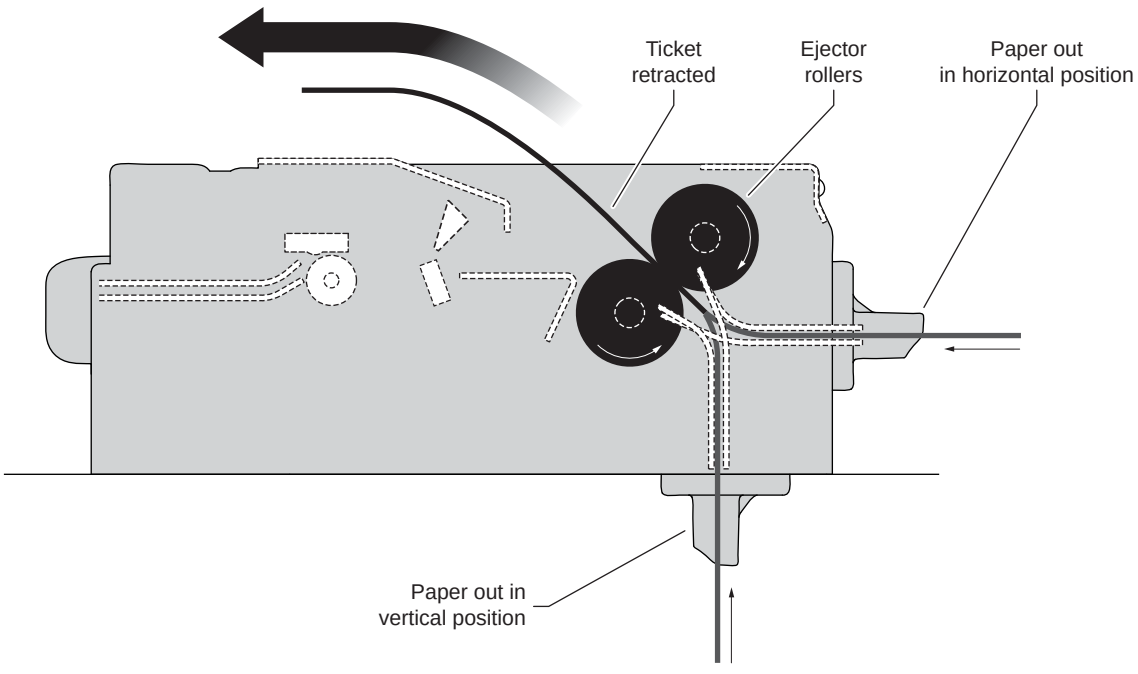


When printing ends, the device cuts the ticket and
presents a portion of the ticket printed on the paper mouth

4

The ticket is waiting on the paper mouth for a preset period of time

4

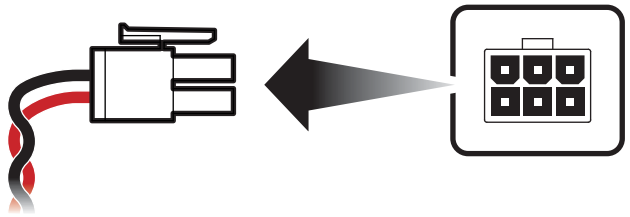


The device retracts and collects the ticket from the mouth paper

4.5 Memory card insertion

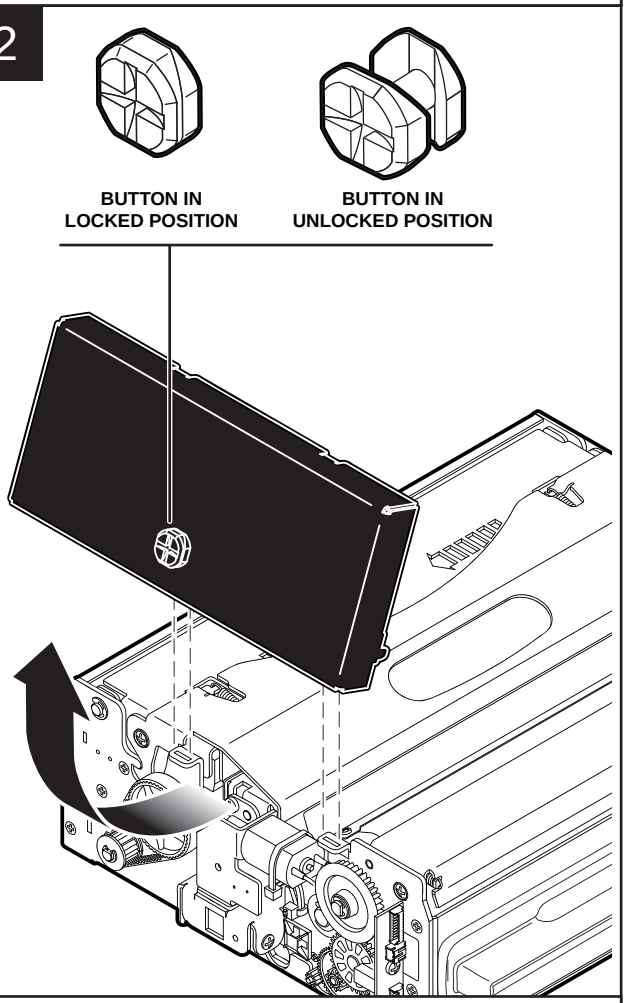
To insert the memory card into the slot, proceed as follows:

1



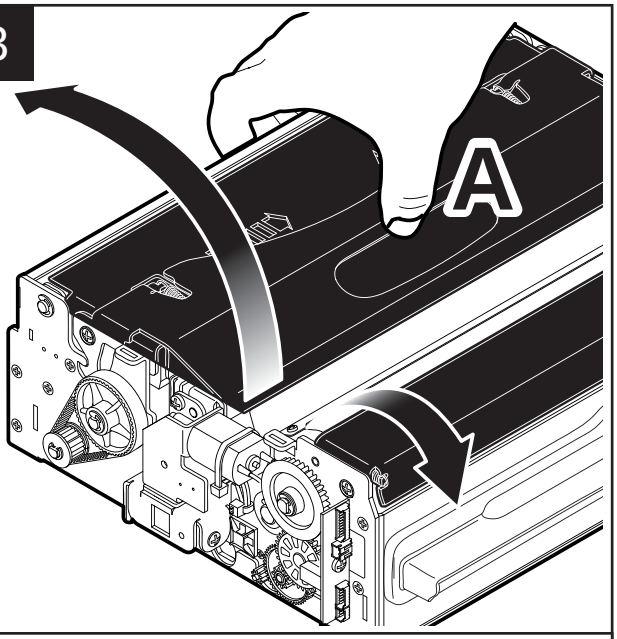
Disconnect the
power supply cable.

2



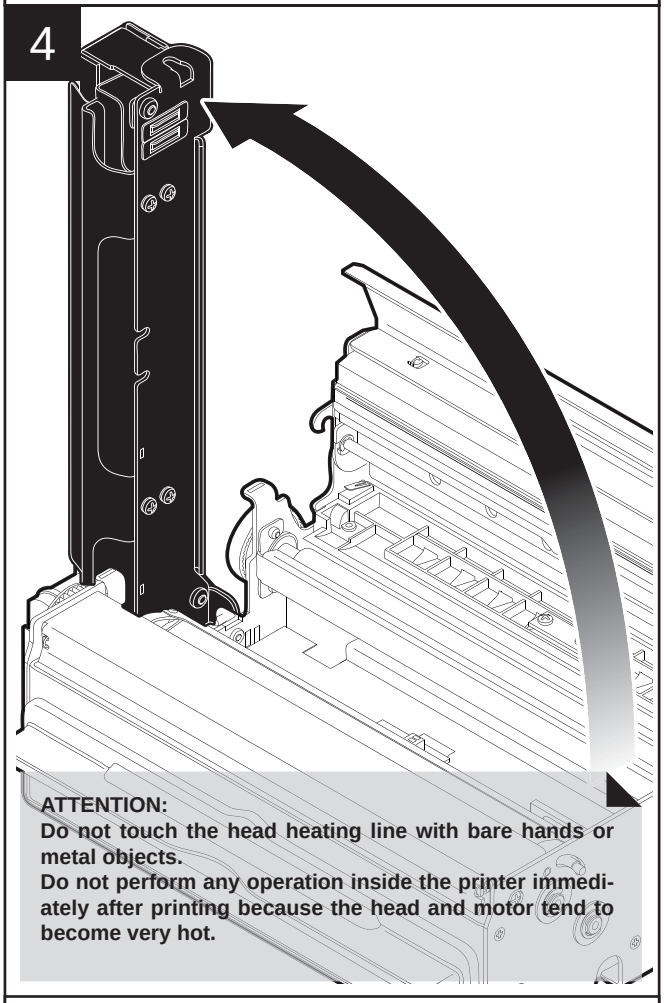
Remove the side cover by
rotating the lock/unlock.

3



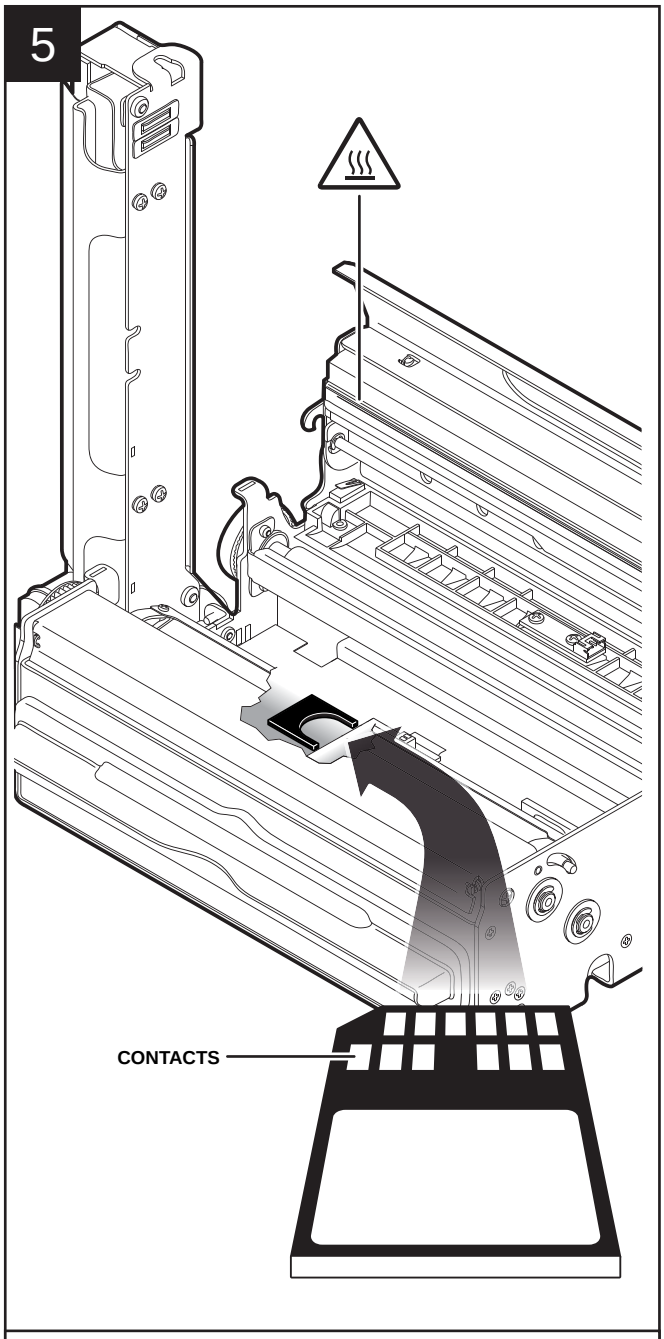
Lift up the print head using the
opening slot (A) located on the cover

4



ATTENTION:
Do not touch the head heating line with bare hands or metal objects.
Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.

Lift up the autocutter.



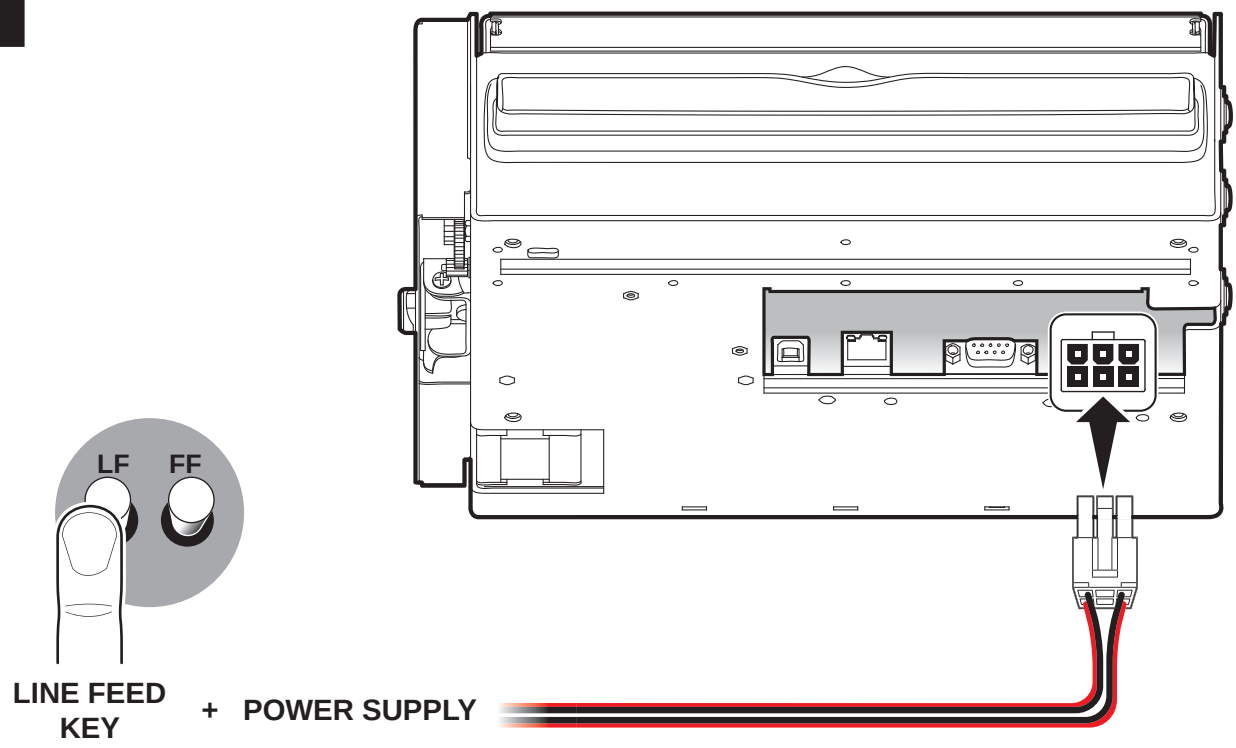
Insert the memory card into the slot,
taking the contacts facing up.

5 CONFIGURATION

5.1 Configuration mode

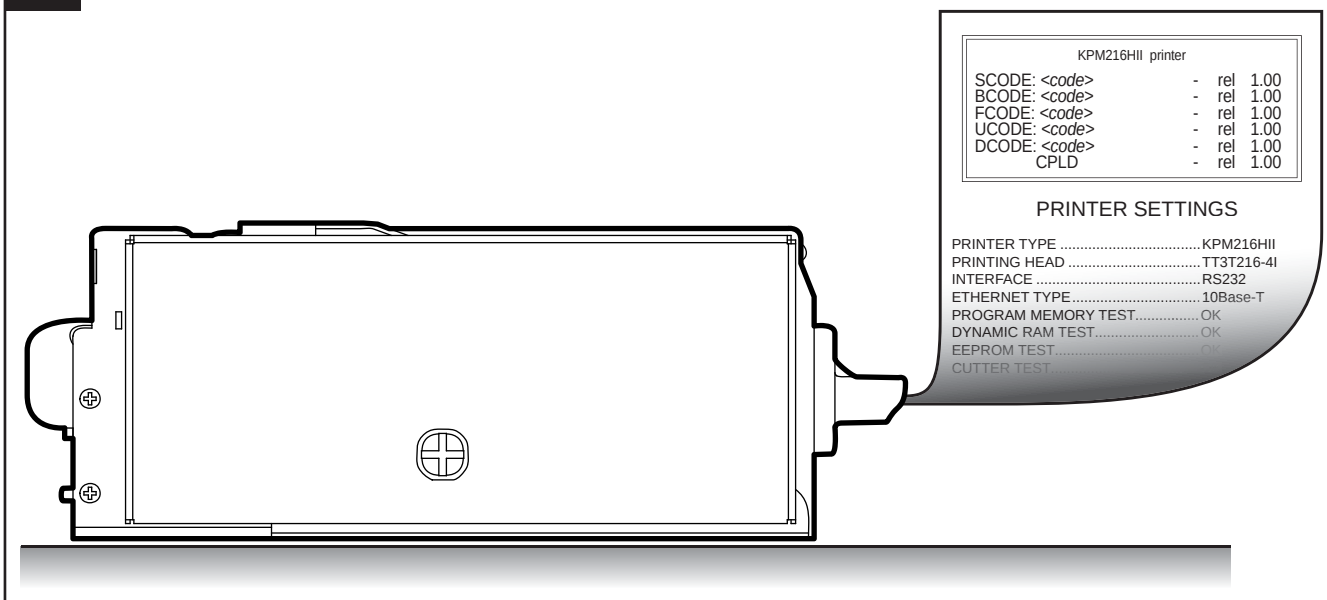
To enter the configuration mode and print a SETUP report with the operating parameters of the printer, proceed as follows.

1



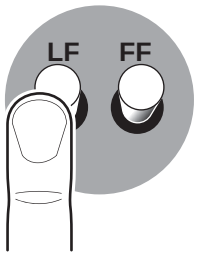
During power-up, hold down the LINE FEED key while
the wiring is plugged into the power supply connector of the printer.

2

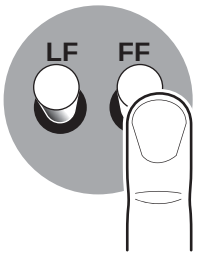


The device prints a SETUP report.

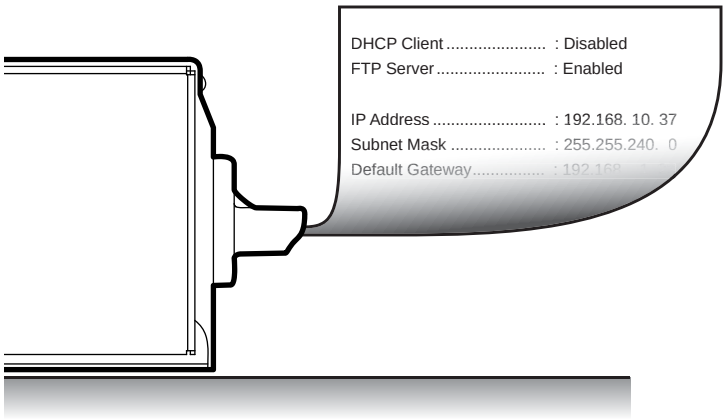
3



LINE FEED KEY

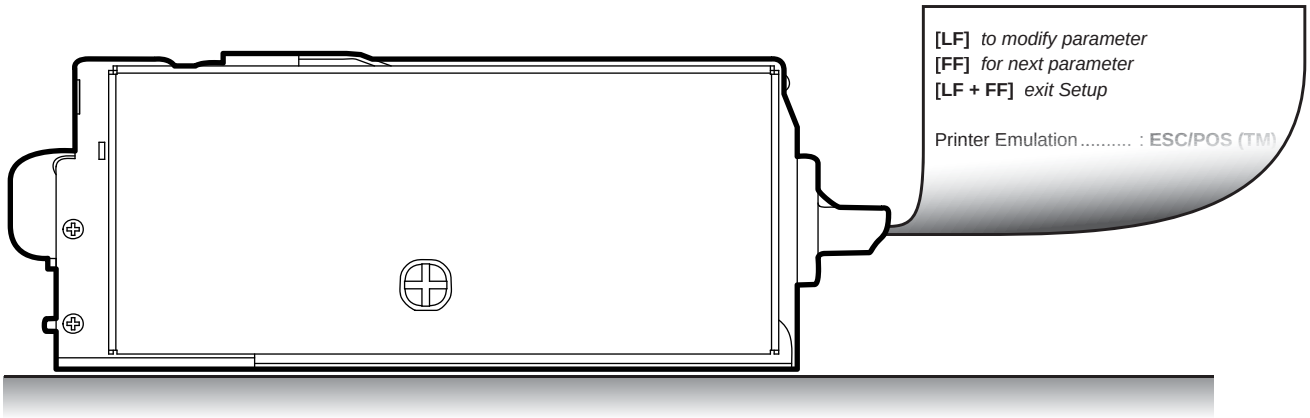


FORM FEED KEY



Press the LINE FEED key to enter the configuration mode or
press the FORM FEED key to print the SETUP report with the Ethernet parameters.

4

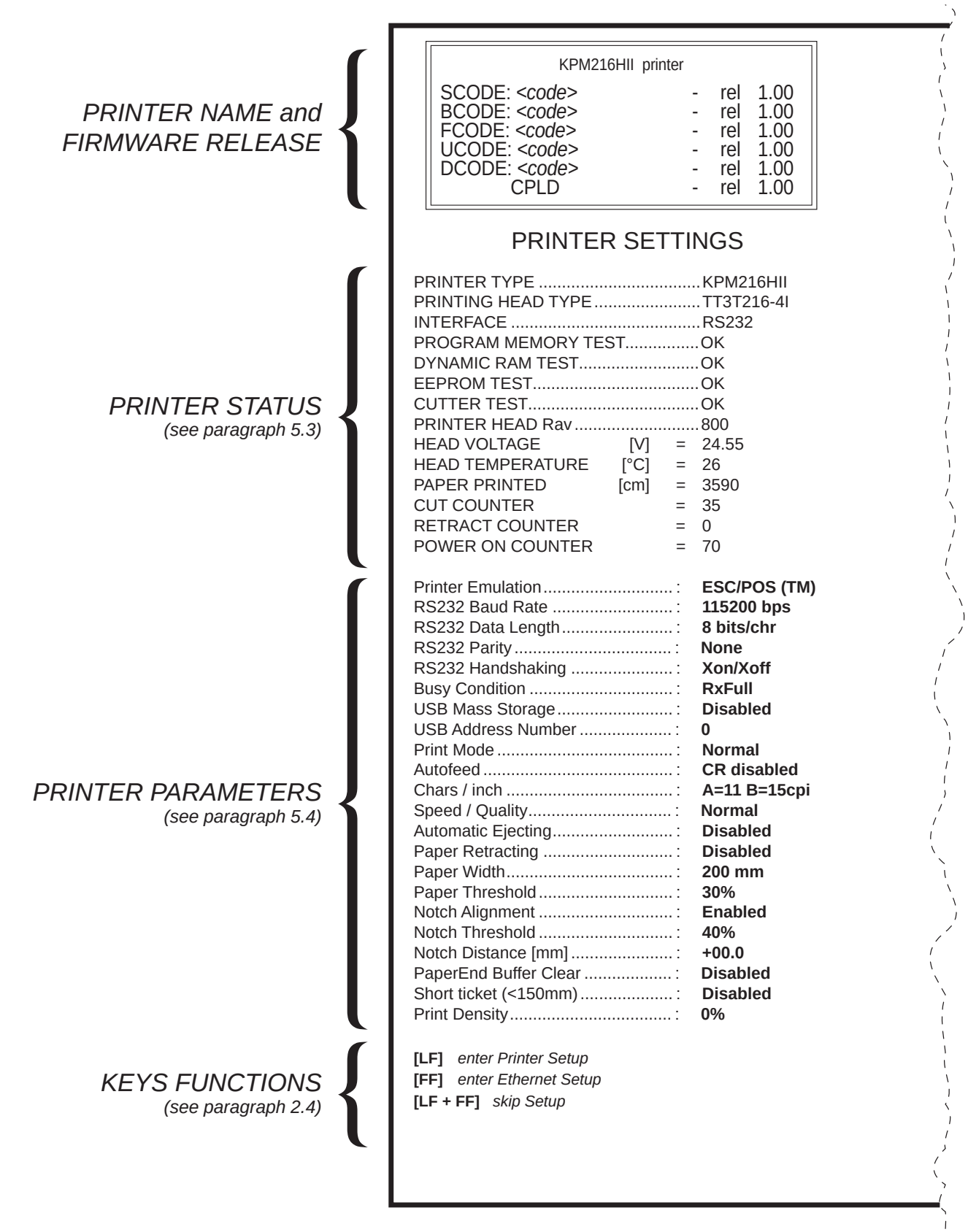


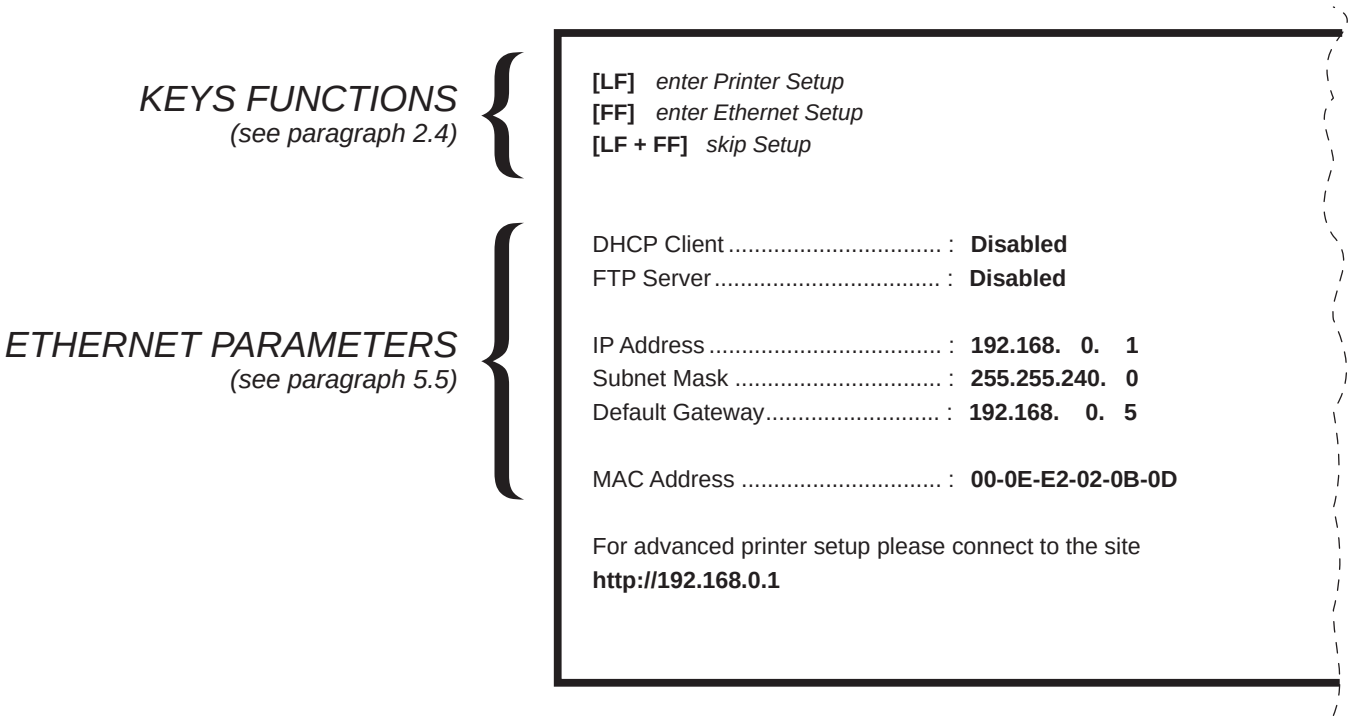
Proceed with the configuration by using the keys according the functions printed on paper.
For description and values of setup parameters, see the following paragraphs.

NOTE:
During power-up, if the LINE FEED key is held down, the printer enters the auto-test routine and prints out the setup report. The printer will remain in standby in Hexadecimal dump mode (see following paragraphs) until another key is pressed or characters are received through the printer communication port.
When the FORM FEED key is pressed, the printer enters parameter configuration.
When the LINE FEED key is pressed, the printer exits setup and terminates the Hexadecimal dump function.

5.2 Setup report

The following figures show the setup reports of the printer. The shown values for parameters are sample values; for the list and the description of printer and Ethernet parameters see the following paragraphs.





5.3 Printer status

Printer operating status is indicated in the configuration print-out in which, next to the name of the components displayed, the following information is given:

PRINTER TYPE	*is given the device model.*
PRINTING HEAD TYPE	*is given the printing head model.*
INTERFACE	*is given the interface present.*
PROGRAM MEMORY TEST	*the message OK appears if functioning and NOT OK if faulty.*
DYNAMIC RAM TEST	*the message OK appears if functioning and NOT OK if faulty.*
EEPROM TEST	*the message OK appears if functioning and NOT OK if faulty.*
CUTTER TEST	*the message OK appears if functioning and NOT OK if faulty.*
PRINTER HEAD Rav	*is given the resistance of a dot head.*
HEAD VOLTAGE	*is given the voltage of the head.*
HEAD TEMPERATURE	*is given the temperature of the head.*
PAPER PRINTED	*is given the number of centimeters of paper printed.*
CUT COUNTER	*is given the number of cuts made.*
RETRACT COUNTER	*is given the number of retract made.*
POWER ON COUNTER	*is given the number of power-ups made.*

5.4 Printer parameters

This printer allows the configuration of the parameters listed in the following table.
The parameters marked with the symbol [D] are the default values.
Settings remain active even after the printer has been turned off and they are stored in non-volatile memory.

PRINTER EMULATION	*Available emulations for the device:* *SVELTA* *ESC/POS™ [D]*
RS232 BAUD RATE	*Communication speed of the serial interface:* *115200 [D] 38400 9600 2400* *57600 19200 4800 1200* **NOTE:** Parameter valid only with serial interface.
RS232 DATA LENGTH	*Number of bit used for characters encoding:* *7 bits/car* *8 bits/car [D]* **NOTE:** Parameter valid only with serial interface.
RS232 PARITY	*Bit for the parity control of the serial interface:* *None [D] = parity bit omitted* *Even = even value for parity bit* *Odd = odd value for parity bit* **NOTE:** Parameter valid only with serial interface.
RS232 HANDSHAKING	*Handshaking:* *XON/XOFF [D] = software handshaking* *Hardware = hardware handshaking (CTS/RTS)* **NOTE:** Parameter valid only with serial interface. **NOTE:** When the receive buffer is full, if handshaking is set to XON/XOFF, the printer sends the XOFF ($13) on the serial port. When the receive buffer has cleared once again, if handshaking is set to XON/XOFF, the printer sends the XON ($11) on the serial port.
BUSY CONDITION	*Activation mode for Busy signal:* *OffLine/ RXFull = Busy signal is activated when the printer is both in OffLine status and the buffer is full* *RXFull [D] = Busy signal is activated when the buffer is full* **NOTE:** Parameter valid only with serial interface.
USB MASS STORAGE	*Sharing mode from Mass Storage:* *Disabled [D] = sharing mode disabled* *Enabled = sharing mode enabled*
USB ADDRESS NUMBER	*Numerical address code for the univocal identification of the USB device (in case of more than a USB device connected with the same PC):* *0 [D] 4 8* *1 5 9* *2 6* *3 7*

PRINT MODE

Printing mode:

Normal [D] = enables printing in normal writing way
Reverse = enables printing rotated 180 degrees

AUTOFEED

Setting of the Carriage Return character:

CR disabled [D] =Carriage Return disabled
CR enabled = Carriage Return enabled

NOTE: The parameter is printed only with ESC/POS™ emulation enabled.

CHARS / INCH

Font selection:

200dpi models	*300dpi models*
A = 11 cpi, B = 15 cpi [D]	*A = 16 cpi, B = 23 cpi [D]*
A = 15 cpi, B = 20 cpi	*A = 23 cpi, B = 30 cpi*

NOTE: CPI = Characters Per Inch
NOTE: The parameter is printed only with ESC/POS™ emulation enabled.

SPEED / QUALITY

Setting of printing speed and printing quality:

Normal [D]
High Quality
High Speed

AUTOMATIC EJECTING

Setting of the automatic ejecting function of the last printed ticket in presentation mode:

Disabled [D] = ejecting function disabled
Enabled T.out 5s = the ticket is ejected after 5 seconds from the end of printing
Enabled T.out 10s = the ticket is ejected after 10 seconds from the end of printing
Enabled T.out 15s = the ticket is ejected after 15 seconds from the end of printing
Enabled T.out 20s = the ticket is ejected after 20 seconds from the end of printing
Enabled T.out 30s = the ticket is ejected after 30 seconds from the end of printing
Enabled T.out 40s = the ticket is ejected after 40 seconds from the end of printing
Enabled T.out 60s = the ticket is ejected after 60 seconds from the end of printing
Enabled T.out 2m = the ticket is ejected after 2 minutes from the end of printing

PAPER RETRACTING

Setting of the automatic retracting function of the last printed ticket in presentation mode:

Disabled [D] = "retract" function disabled
Enabled No Timeout = "retract" function enabled and executable with the command
Enabled T.out 5s = the ticket is retracted after 5 seconds from the end of printing
Enabled T.out 10s = the ticket is retracted after 10 seconds from the end of printing
Enabled T.out 15s = the ticket is retracted after 15 seconds from the end of printing
Enabled T.out 20s = the ticket is retracted after 20 seconds from the end of printing
Enabled T.out 30s = the ticket is retracted after 30 seconds from the end of printing
Enabled T.out 40s = the ticket is retracted after 40 seconds from the end of printing
Enabled T.out 60s = the ticket is retracted after 60 seconds from the end of printing
Enabled T.out 2m = the ticket is retracted after 2 minutes from the end of printing

PRINT WIDTH

Width of printing area:

172 mm	*184 mm*	*196 mm*
174 mm	*186 mm*	*198 mm*
176 mm	*188 mm*	*200 mm [D]*
178 mm	*190 mm*	
180 mm	*192 mm*	
182 mm	*194 mm*	

PAPER THRESHOLD

Threshold value (in percent) for the recognition of the presence of paper by the paper presence sensor:

30% D	*60%*	*90%*
40%	*70%*	
50%	*80%*	

NOTCH ALIGNMENT

Management of the alignment notch

Disabled D = the notch alignment is not performed
Enabled = the notch alignment is performed

NOTCH THRESHOLD

Threshold value (in percent) for the recognition of the presence of notch by the notch sensor:

30%	*60%*	*90%*
40% D	*70%*	
50%	*80%*	

NOTE: If the "Notch Alignment" parameter is disabled, this parameter is not printed.

NOTCH DISTANCE

"Notch Distance" is the minimum distance (in mm) between the upper edge of ticket and the notch (see chapter 10).
The numeric value of the distance is made up with the following four parameters for the setting of three digits (two for the integer part of the number and one for the decimal part) and of the sign):

NOTCH DISTANCE SIGN

Sign setting:

+ D = positive distance
- = negative distance

NOTCH DISTANCE [mm x 10]

Setting the digit for tens:

0 D	*2*	*4*	*6*	*8*
1	*3*	*5*	*7*	*9*

NOTCH DISTANCE [mm x 1]

Setting the digit for units:

0 D	*2*	*4*	*6*	*8*
1	*3*	*5*	*7*	*9*

NOTCH DISTANCE [mm x .1]

Setting the digit for decimals:

0 D	*2*	*4*	*6*	*8*
1	*3*	*5*	*7*	*9*

NOTE: For example, to set the notch distance to 15 mm, modify the parameters as follows:
Notch Distance Sign = +
Notch Distance [mm x 10] = 1
Notch Distance [mm x 1] = 5
Notch Distance [mm x .1] = 0
NOTE: If the "Notch Alignment" parameter is disabled, the parameters for the "Notch Distance" are not printed.

PAPEREND BUFFER CLEAR

Cleaning mode of the data in receive buffer, if the printing is stopped due to lack of paper:

Disabled D = The data remain in the receive buffer. When the paper runs out, the printer keeps the remaining data in the receive buffer and prints the remaining portion of the ticket after that the new paper is loaded.
Enabled = When the paper runs out, all data in the receive buffer are deleted.

SHORT TICKET (<150mm)	*This parameter allows the ticket management:* *Disabled [D] = no check* *Enabled = it is possible to manage tickets with length less than the distance between the notch sensor and the printing line (160mm)*
PRINT DENSITY	*Adjusting the printing density:* *-50% -12% +25%* *-37% 0 [D] +37%* *-25% +12% +50%*

5.5 Ethernet parameters

This printer allows the configuration of the parameters listed in the following table.
The parameters marked with the symbol [D] are the default values.
Settings remain active even after the printer has been turned off.

DHCP CLIENT	*Setting of the DHCP protocol:* *Disabled [D] = protocol disabled* *Enabled = protocol enabled*
FTP SERVER	*Setting of the FTP server:* *Disabled [D] = server disabled* *Enabled = server enabled*
IP ADDRESS	*IP address of printer; this parameter is assigned by the network administrator.* **NOTE:** Press the FORM FEED key to modify the value of the highlighted digit. Pressing LINE FEED key to move the cursor on the next digit (if the cursor is on the latest digit, proceed to next parameter by pressing the LINE FEED key).
SUBNET MASK	*This parameter identifies the local network address.* **NOTE:** Press the FORM FEED key to modify the value of the highlighted digit. Pressing LINE FEED key to move the cursor on the next digit (if the cursor is on the latest digit, proceed to next parameter by pressing the LINE FEED key).
DEFAULT GATEWAY	*This parameter identifies the Gateway IP address used to send applications to the external network.* **NOTE:** Press the FORM FEED key to modify the value of the highlighted digit. Pressing LINE FEED key to move the cursor on the next digit (if the cursor is on the latest digit, proceed to next parameter by pressing the LINE FEED key).
MAC ADDRESS	*This is the number, provided by the constructor, that identifies the printer; this number is univocal.* **NOTE:** This parameter can't be modified by set up.

ATTENTION:
Any changes to network parameters will interrupt browser connection. If the server not responding you must reconnect to the new IP address set.

5.6 Hexadecimal dump

This function is used to diagnose the characters received through the communication port; the characters are printed out both as hexadecimal codes and ASCII codes.
Once the self-test routine has finished, the printer enters Hexadecimal Dump mode. The printer remains in standby until a key is pressed or characters are received through the communication port. For example, in the 200 dpi model, for every 8 characters received, the hexadecimal and corresponding ASCII codes are printed out (if the characters are underlined, the receive buffer is full). Shown below is an example of a Hexadecimal Dump:

HEXADECIMAL DUMP

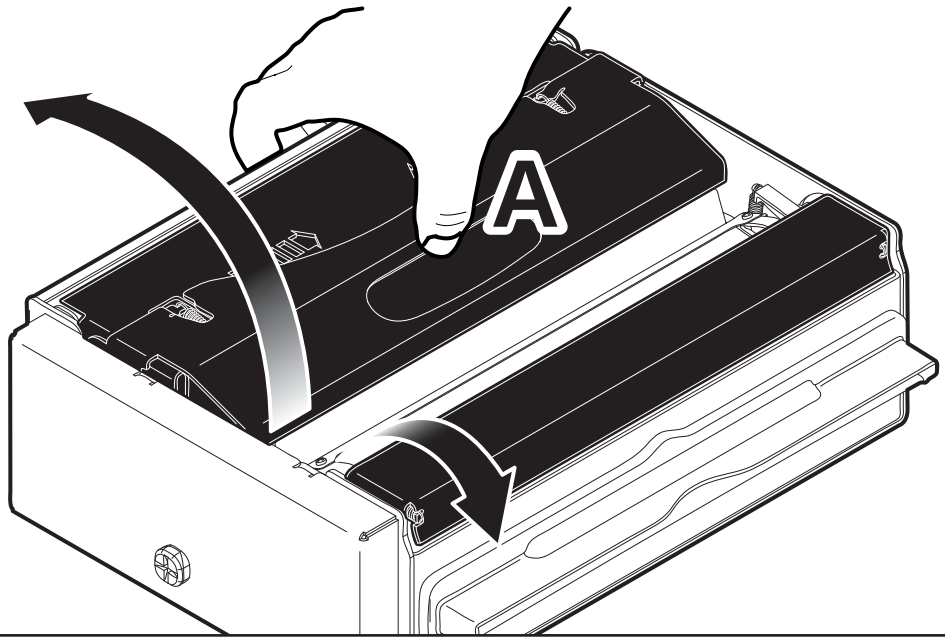
50	72	69	6E	74	20	4C	69	6E	65	0A	50	72	69	Print Line·Pri
6E	74	20	4C	69	6E	65	0A	50	72	69	6E	74	20	nt Line·Print
4C	69	6E	65	0A	50	72	69	6E	74	20	4C	69	6E	Line·Print Lin
65	0A	50	72	69	6E	74	20	4C	69	6E	65	0A	50	e·Print Line·P
72	69	6E	74	20	4C	69	6E	65	0A	50	72	69	6E	rint Line·Prin
74	20	4C	69	6E	65	0A	50	72	69	6E	74	20	4C	t Line·Print L
69	6E	65	0A	50	72	69	6E	74	20	4C	69	6E	65	ine·Print Line
0A	50	72	69	6E	74	20	4C	69	6E	65	0A	50	72	·Print Line·Pr

6 MAINTENANCE

6.1 Ejector paper jam

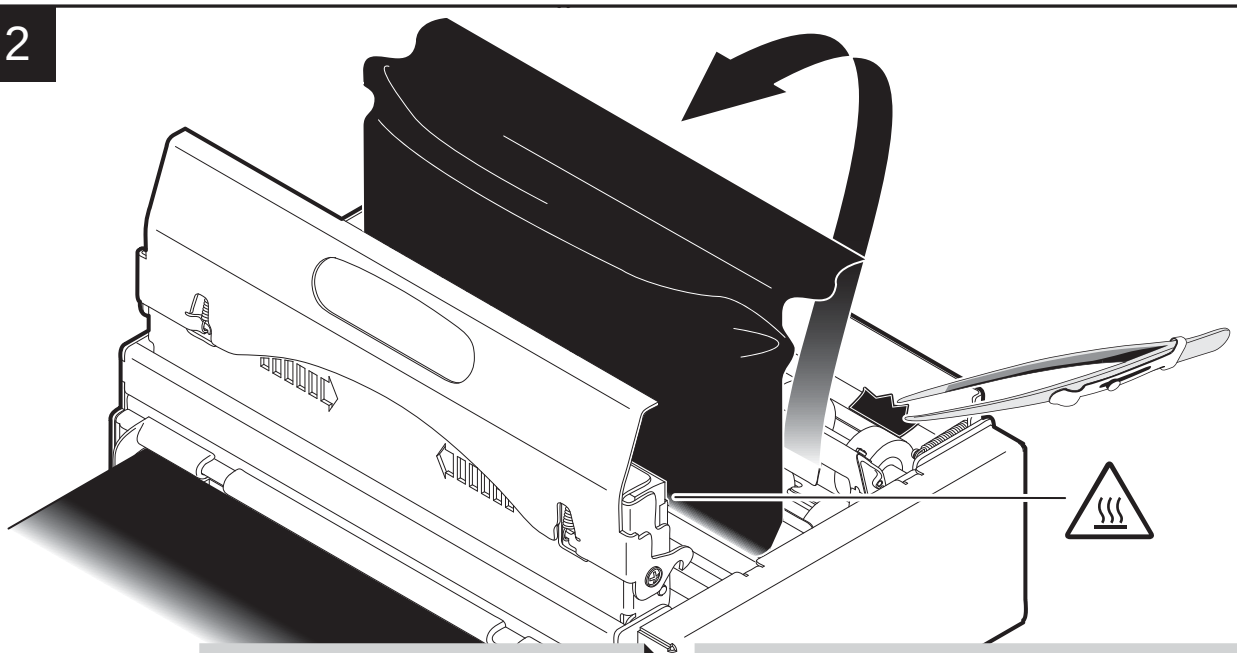
In case of paper jam proceed as follows:

1



Lift up the print head using the opening slot (A) located on the cover,
lift up the rollers cover

2

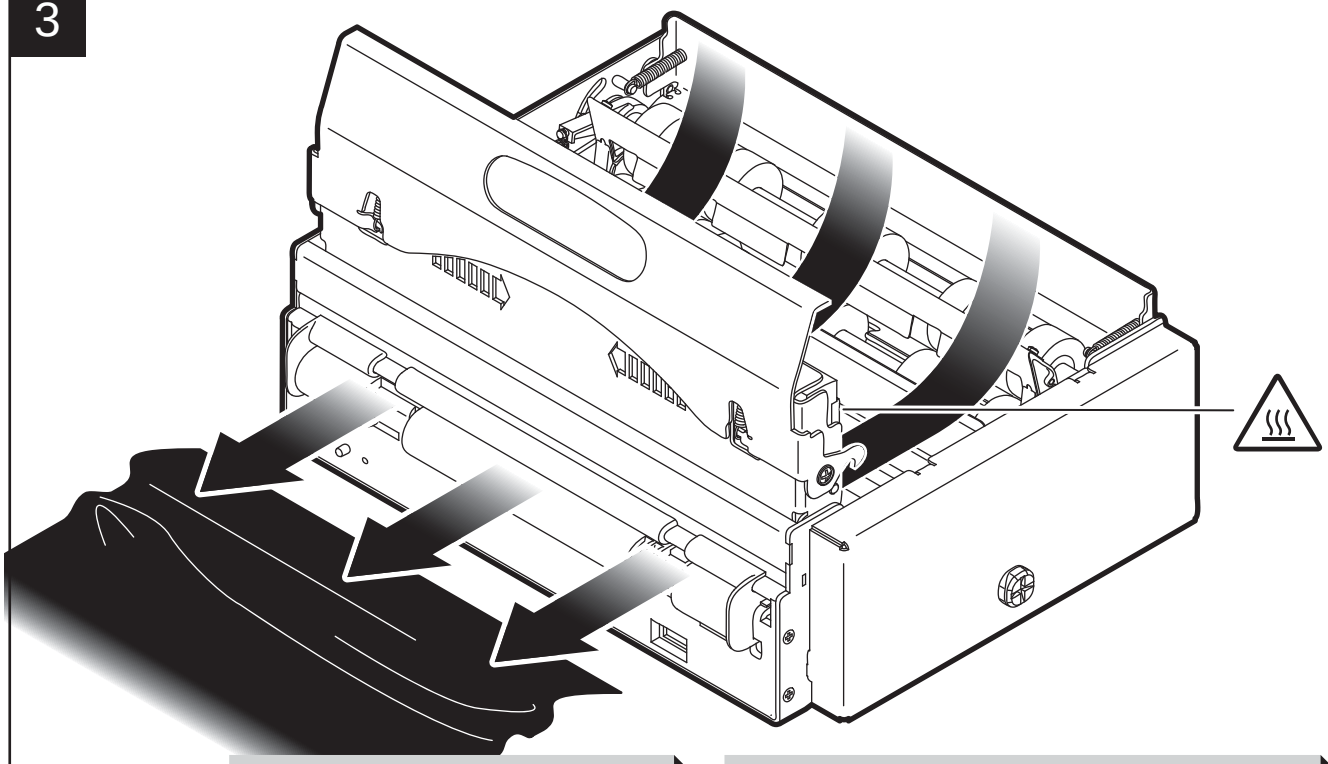


ATTENTION:
Do not touch the head heating line with bare hands or metal objects.
Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.

ATTENTION:
Do not let water or other liquids get inside the device.
Do not insert any kind of object inside the device.

Remove the damaged paper from the ejector rollers and check the presence
for paper scraps inside the printer; carefully remove all scraps of paper. If necessary, use tweezers.

3

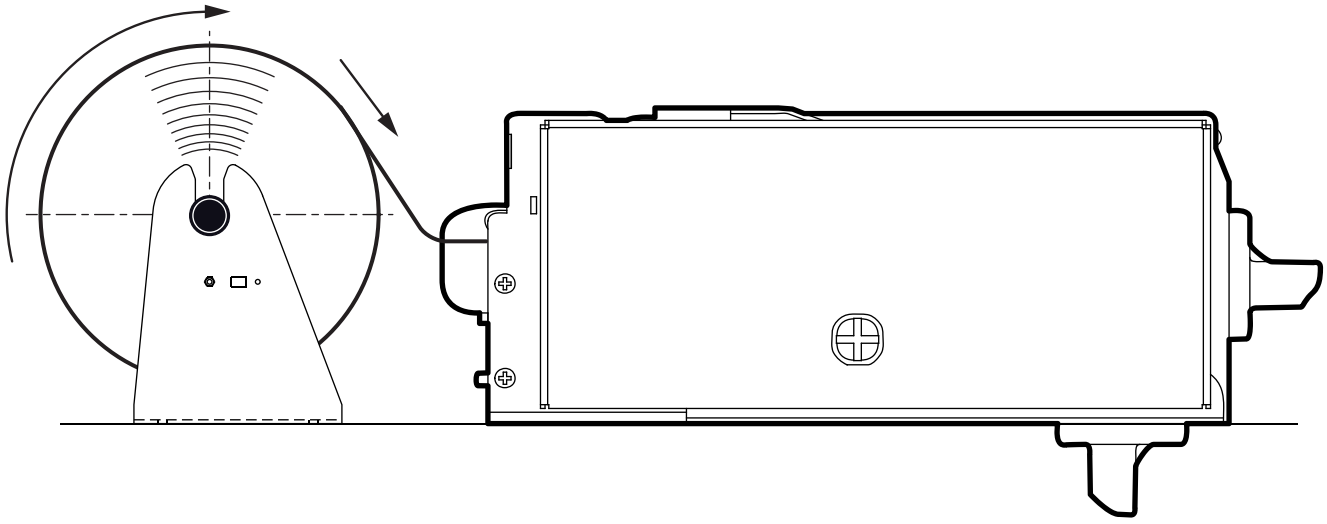


ATTENTION:
Do not touch the head heating line with bare hands or metal objects.
Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.

ATTENTION:
Do not let water or other liquids get inside the device.
Do not insert any kind of object inside the device.

Remove the damaged paper by pulling it in the direction shown in figure.

4

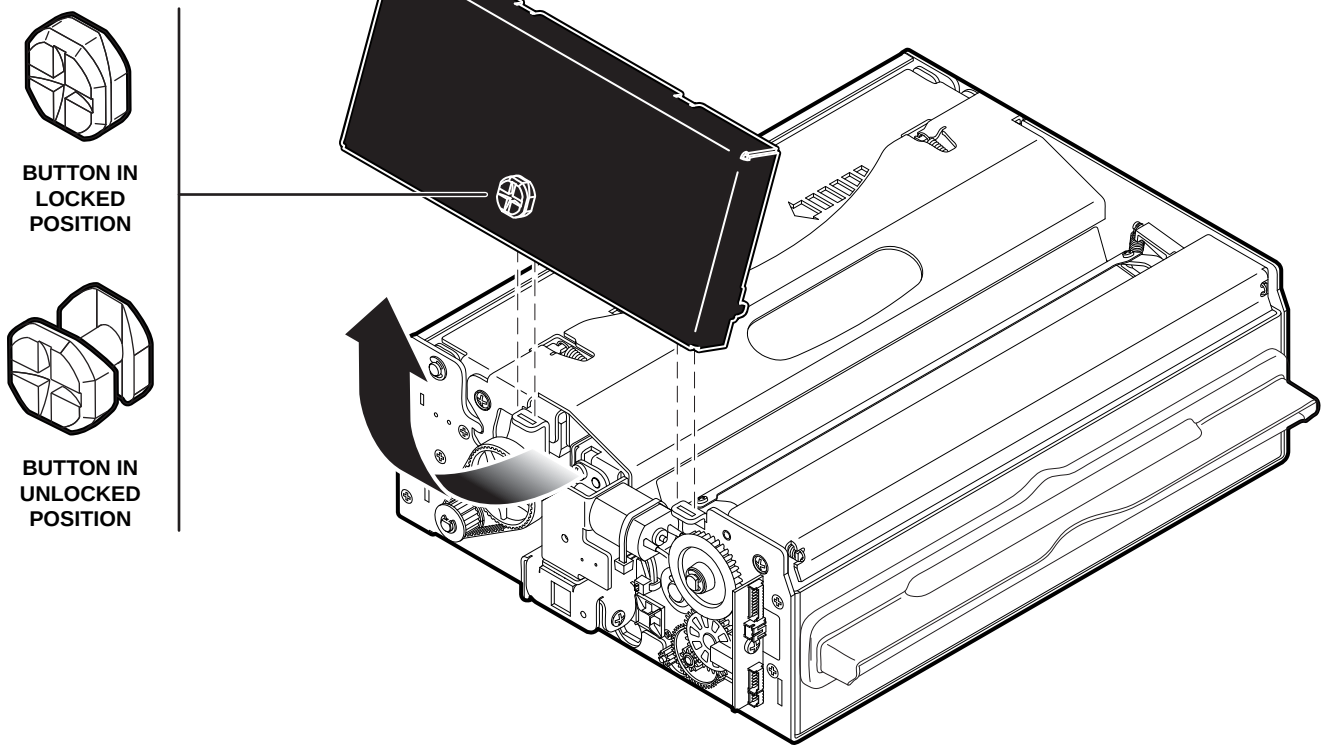


Insert the new paper
(see previous paragraphs).

6.2 Autocutter paper jam

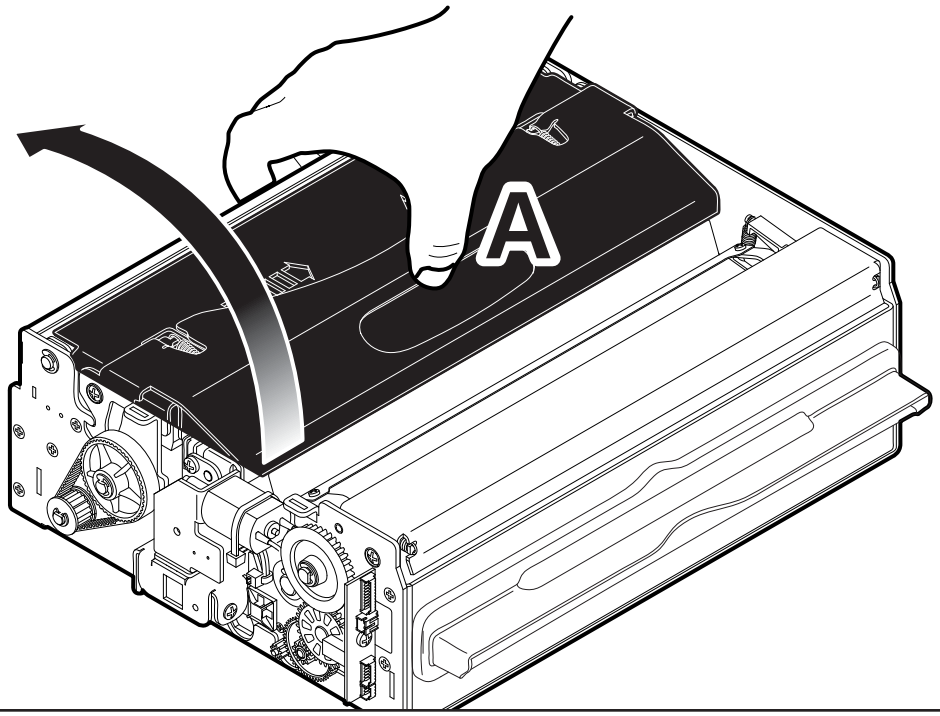
In case of paper jam proceed as follows:

1



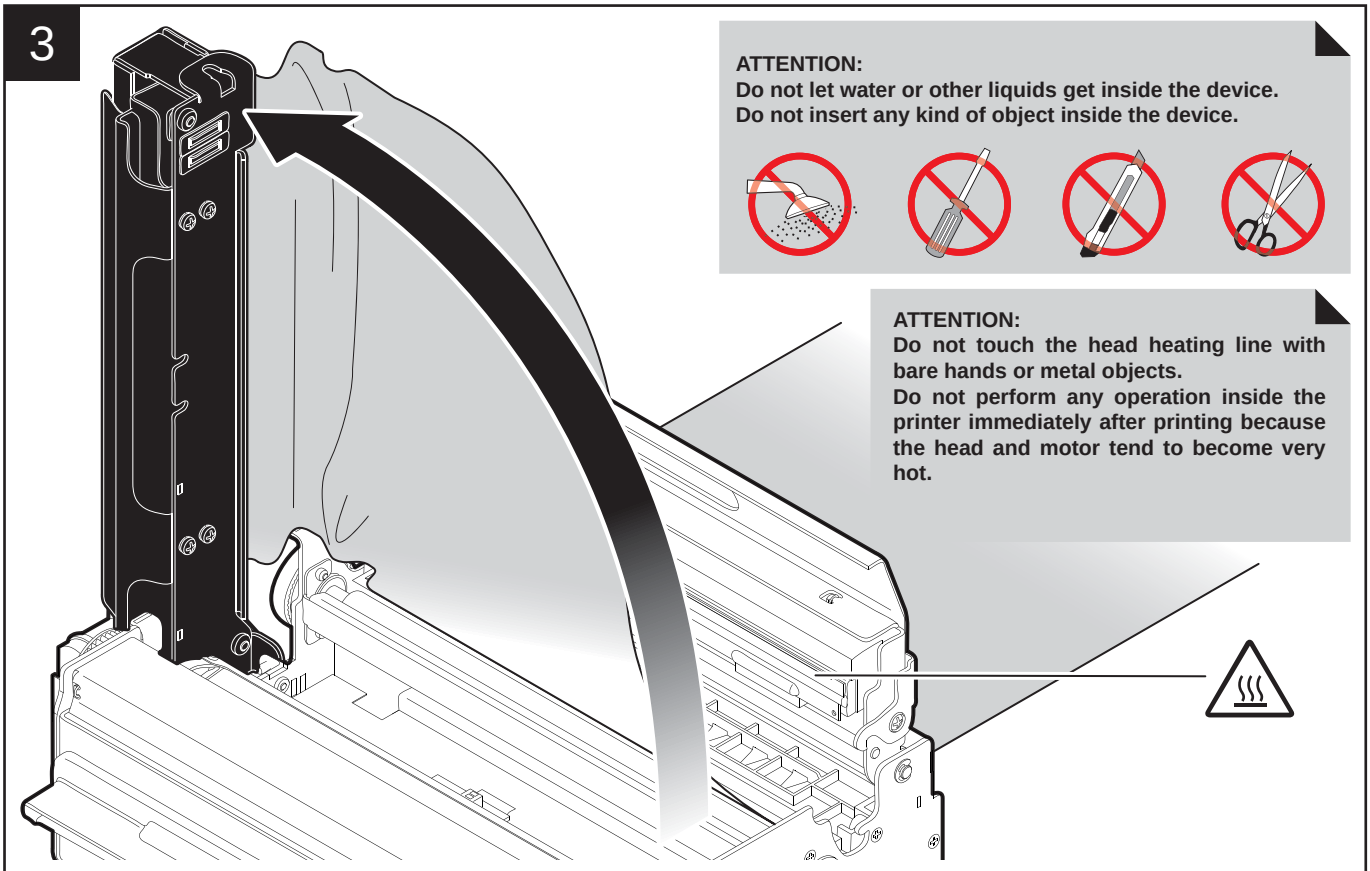
Remove the side cover by rotating the lock/unlock.

2



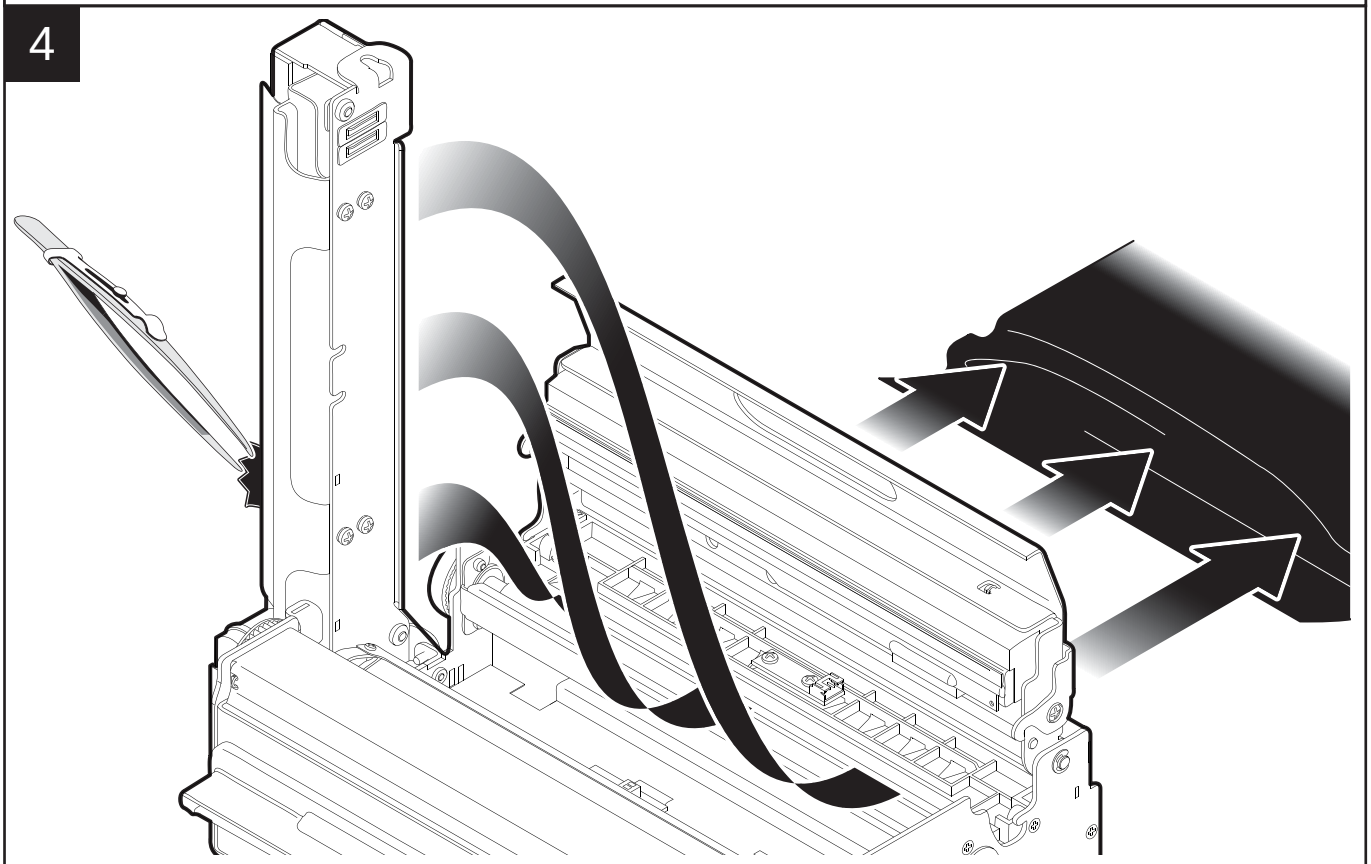
Lift up the print head using the opening slot (A) located on the cover

3



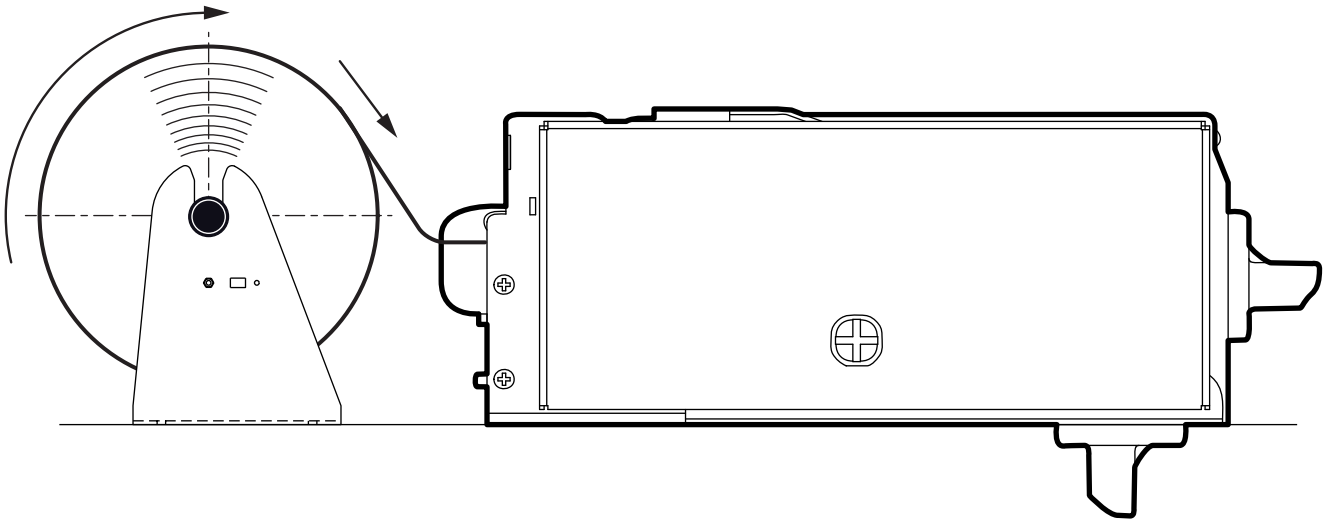
Lift up the autocutter.

4



Remove the damaged paper from the autocutter and check the presence for paper scraps inside the printer; carefully remove all scraps of paper. If necessary, use tweezers.

5



Insert the new paper
(see previous paragraphs).

6.3 Planning of cleaning operations

The regular cleaning of the device keeps the print quality and extends its life. The following table shows the recommended planning for the cleaning operations.

EVERY PAPER CHANGE	
Printing head	Use isopropyl alcohol
Rollers	Use isopropyl alcohol
EVERY 5 PAPER CHANGES	
Ejector	Use compressed air
Cutter	Use compressed air
Paper path	Use compressed air or tweezers
Sensors	Use compressed air
EVERY 6 MONTHS OR AS NEEDED	
Printer case	Use compressed air or a soft cloth

For specific procedures, see the following pages.

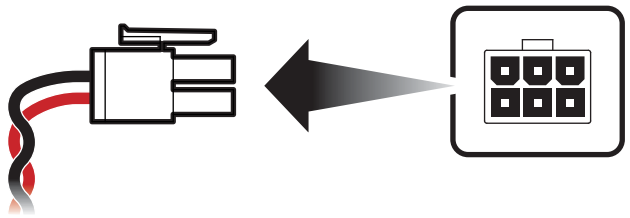
NOTE:
If you use the device in dusty environments, you must reduce the intervals between the cleaning operations.

6.4 Cleaning

For periodic cleaning of the printer, see the instructions below

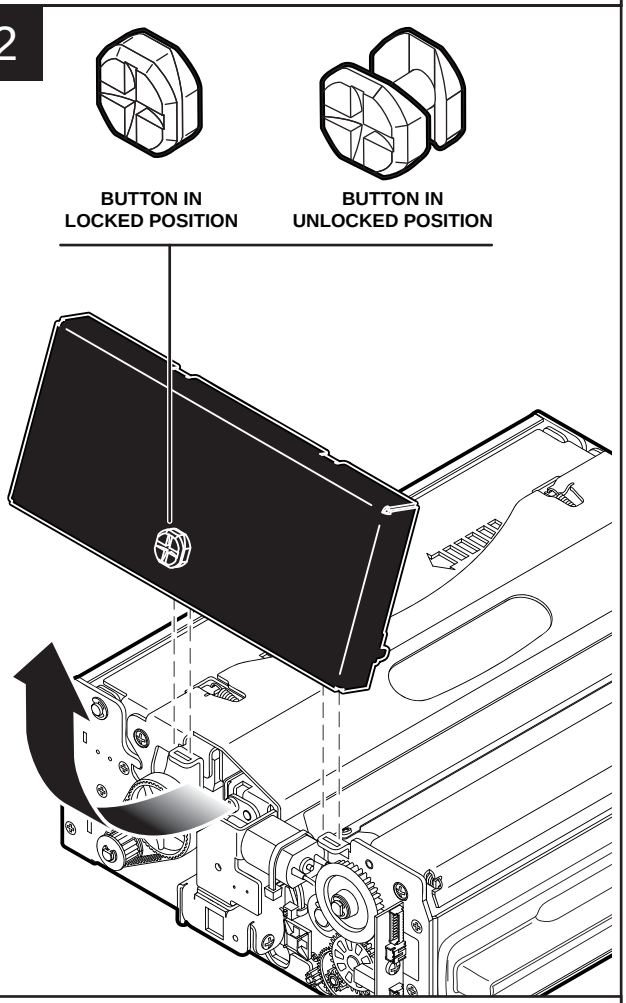
SENSORS

1



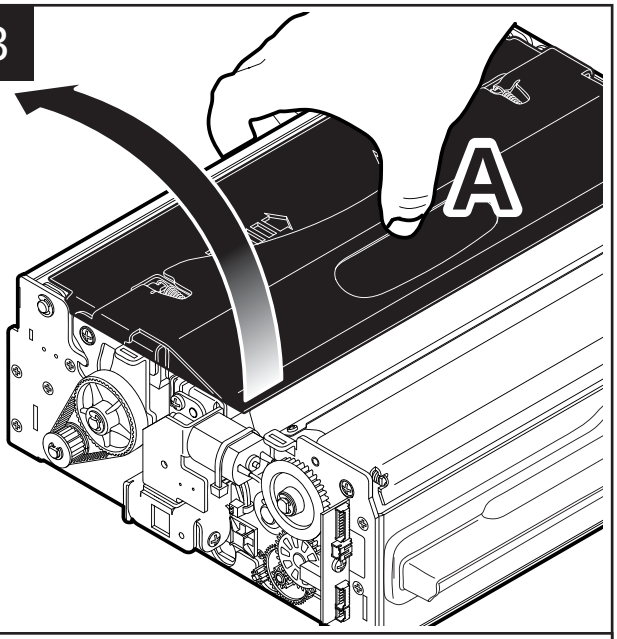
Disconnect the
power supply cable.

2



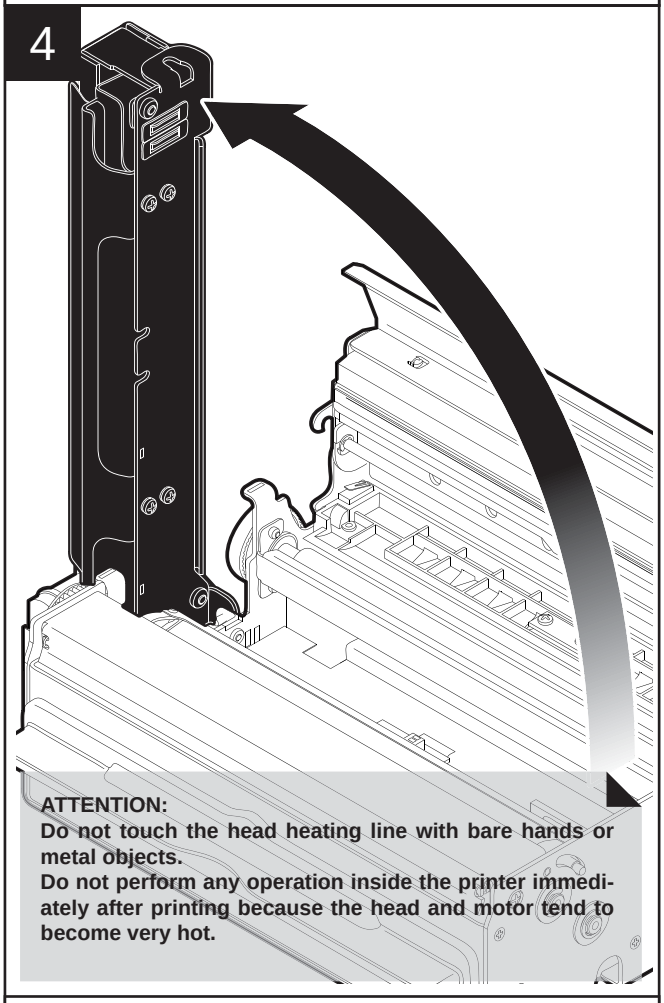
Remove the side cover by
rotating the lock/unlock.

3



Lift up the print head using the
opening slot (A) located on the cover

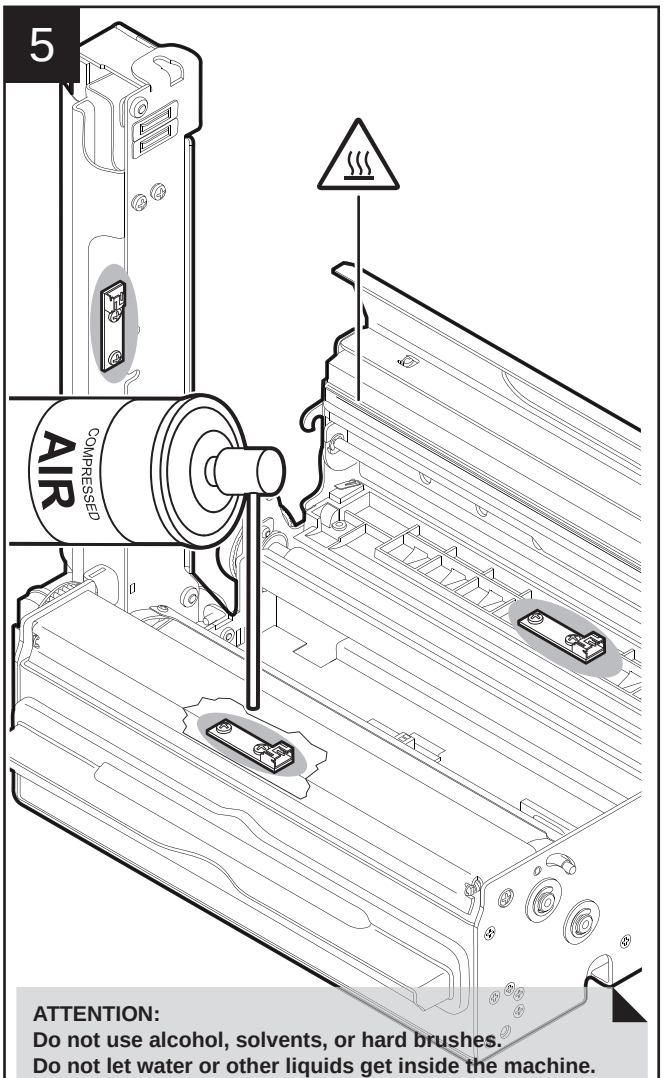
4



ATTENTION:
Do not touch the head heating line with bare hands or metal objects.
Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.

Lift up the autocutter.

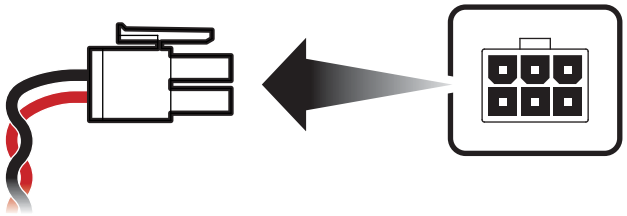
5



Clean the printer sensors
by using compressed air.

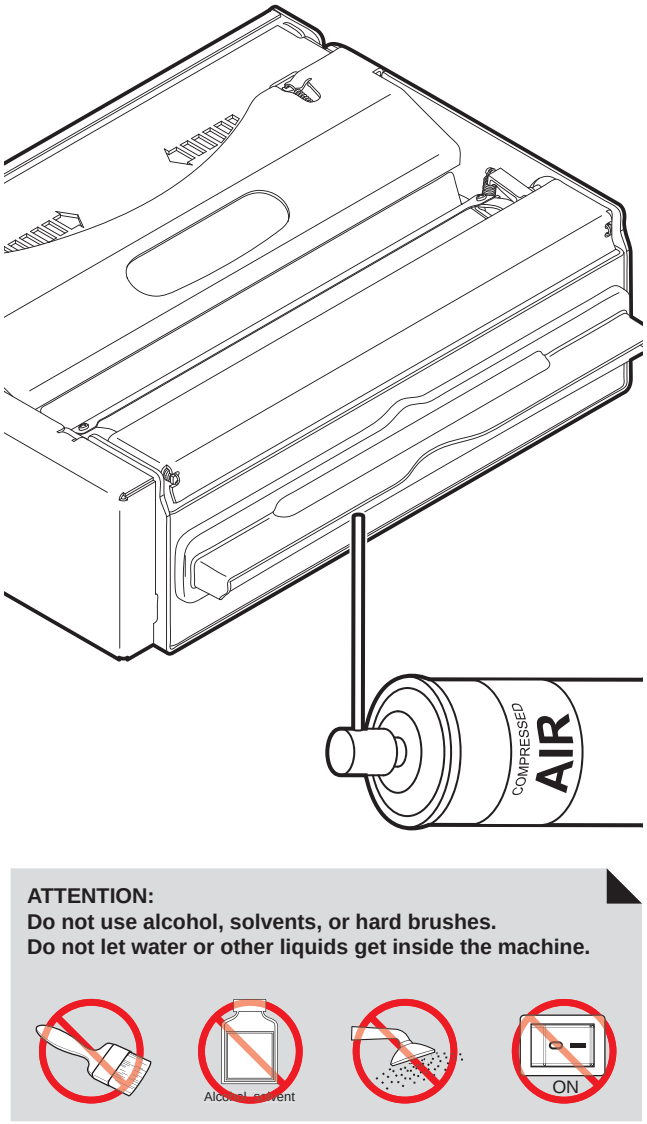
PAPER PATH

1



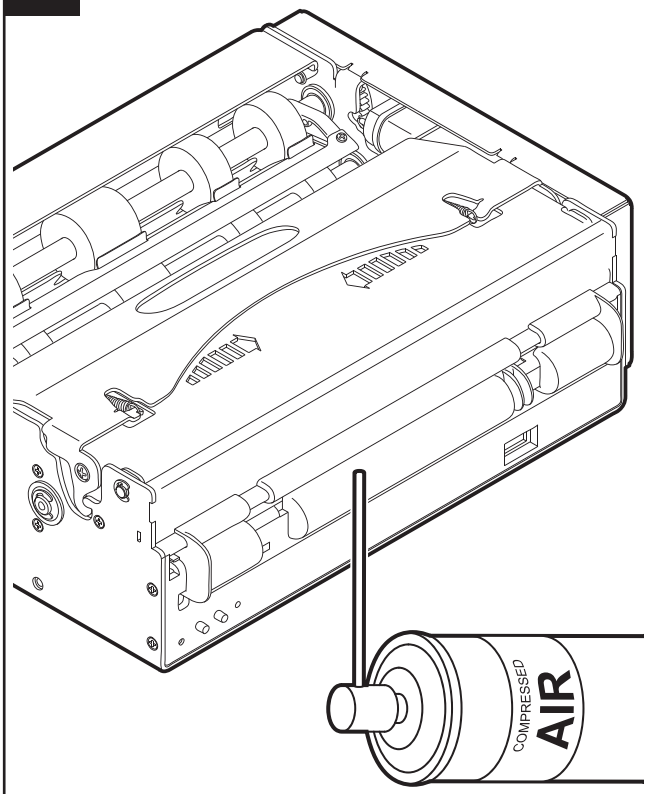
Disconnect the
power supply cable.

2



Clean the paper output area
by using compressed air.

3

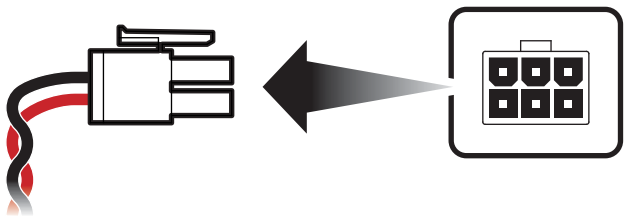


ATTENTION:
Do not use alcohol, solvents, or hard brushes.
Do not let water or other liquids get inside the machine.

Clean the paper input area
by using compressed air.

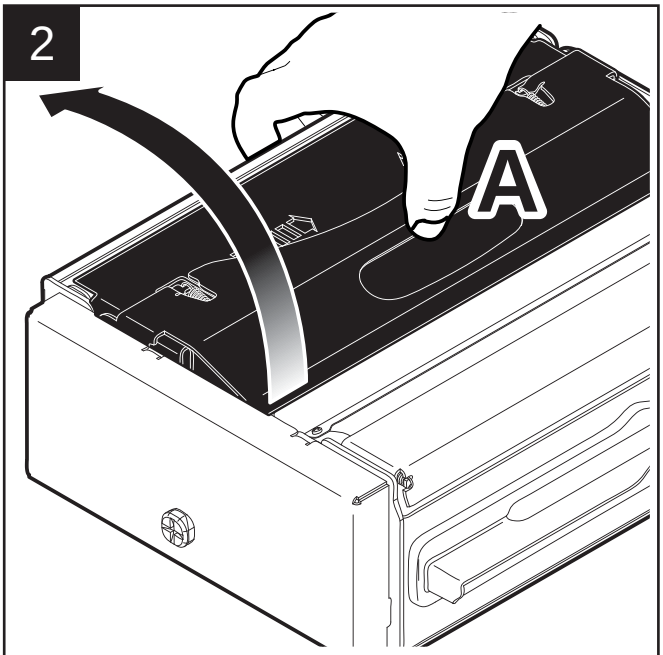
PRINTING HEAD

1



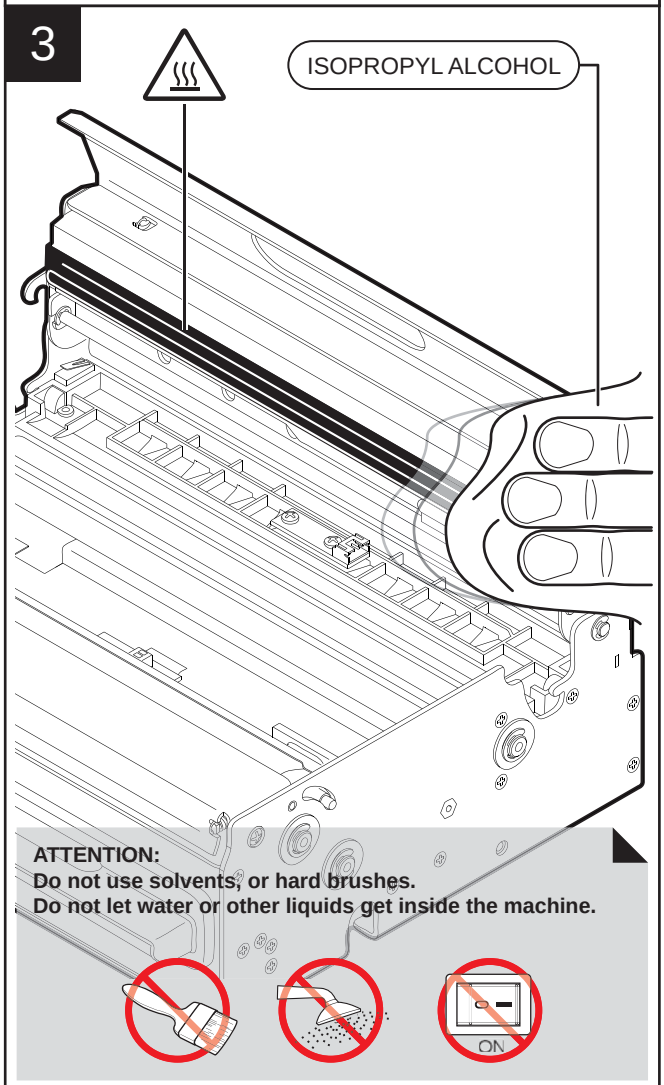
Disconnect the
power supply cable.

2



Lift up the print head using the
opening slot (A) located on the cover

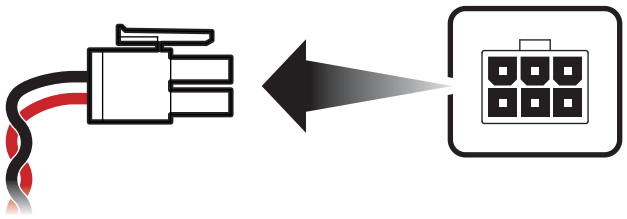
3



Clean the printing head by using
a non-abrasive cloth moistened with isopropyl.

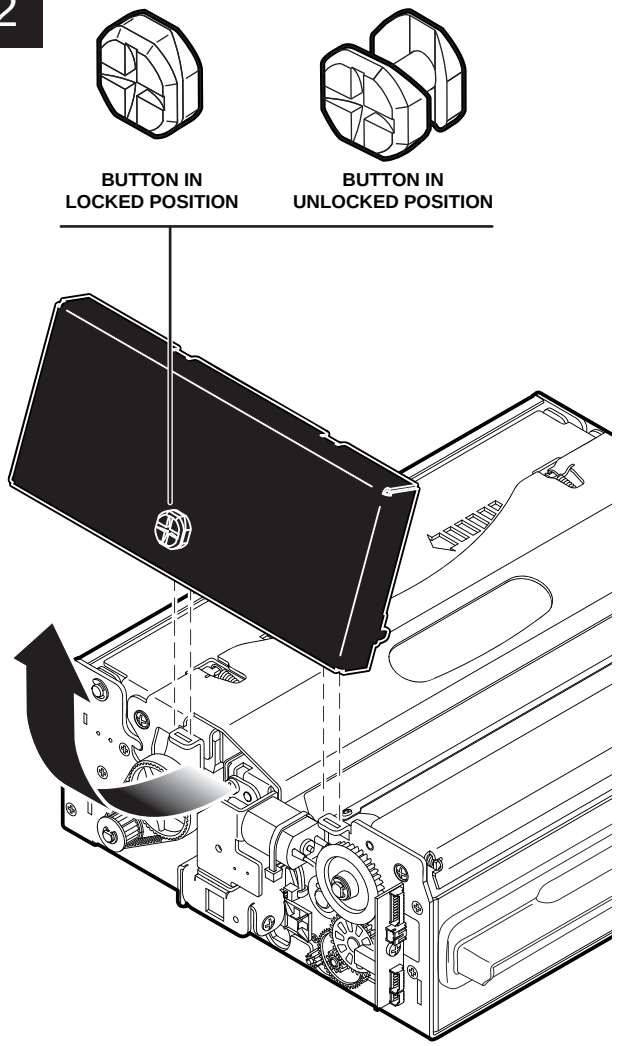
PRINTING ROLL

1



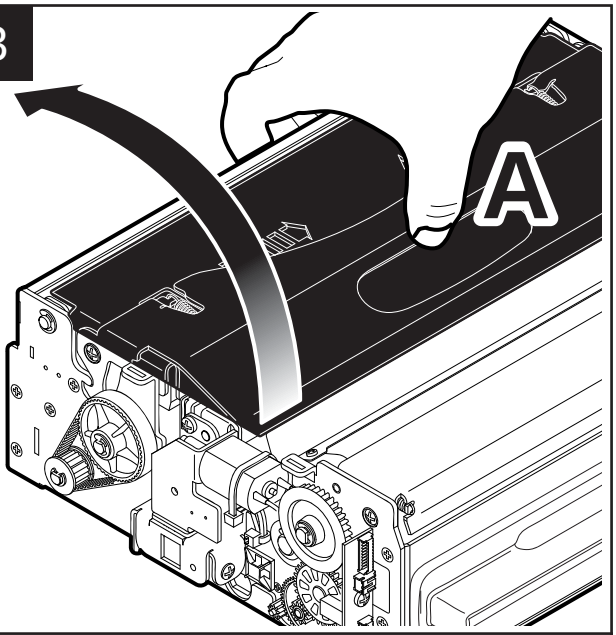
Disconnect the
power supply cable.

2



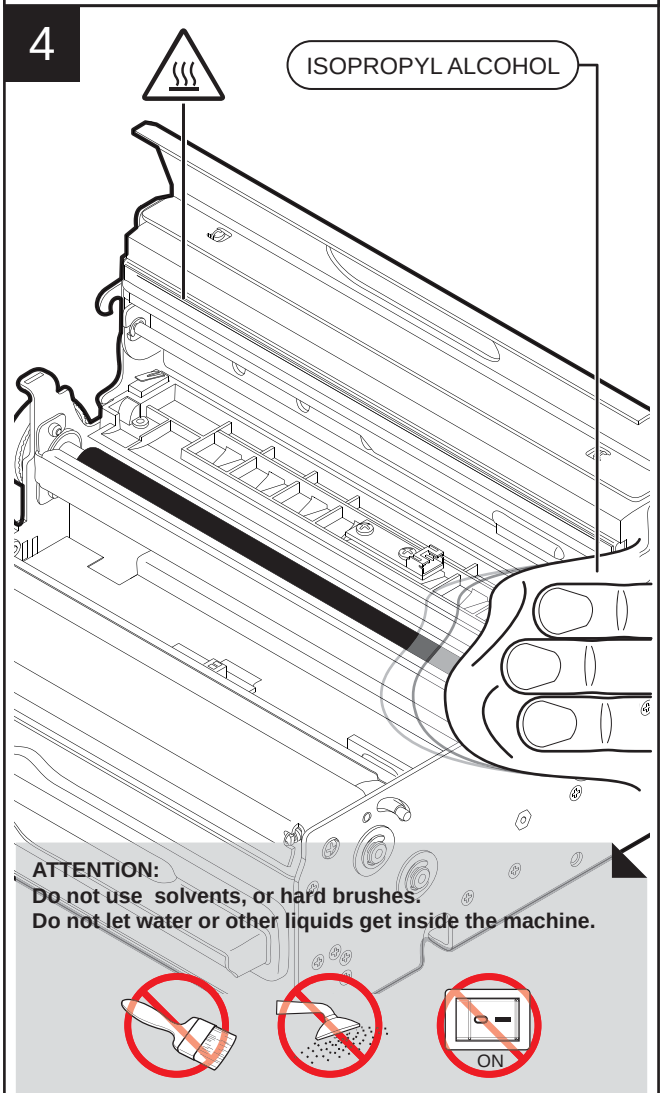
Remove the side cover by
rotating the lock/unlock.

3



Lift up the print head using the
opening slot (A) located on the cover

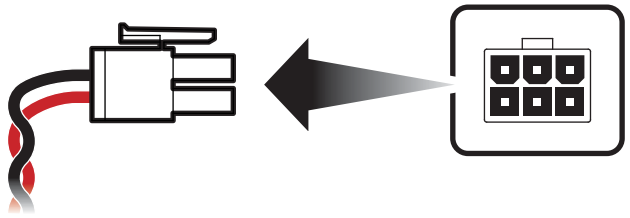
4



Clean the dragging roller
by using a soft cloth moistened with isopropyl.

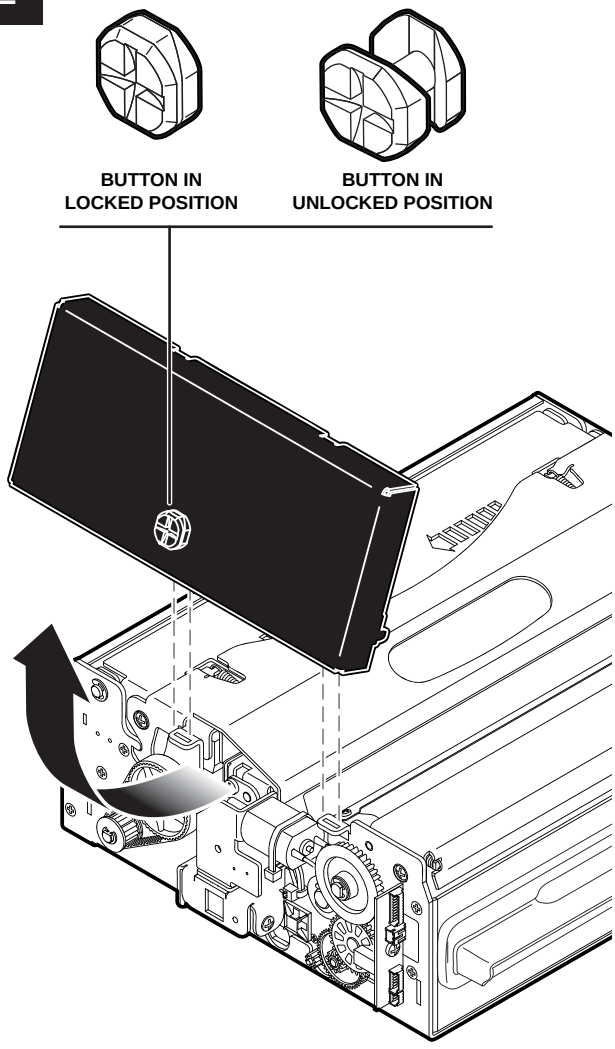
CUTTER

1



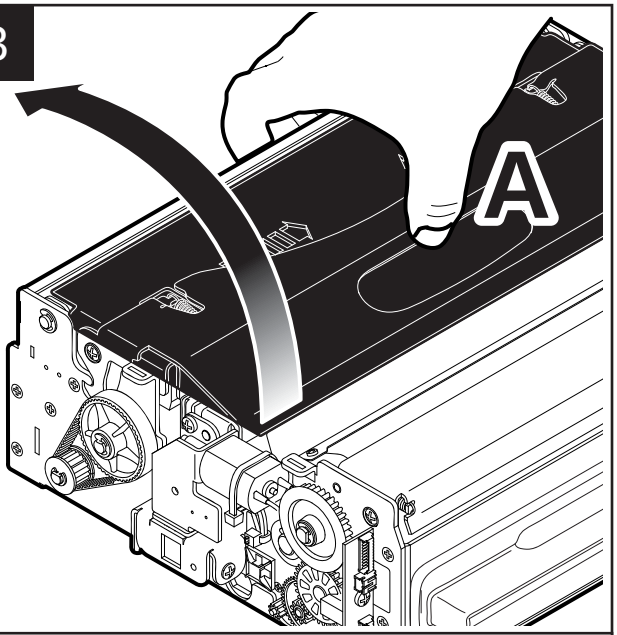
Disconnect the
power supply cable.

2



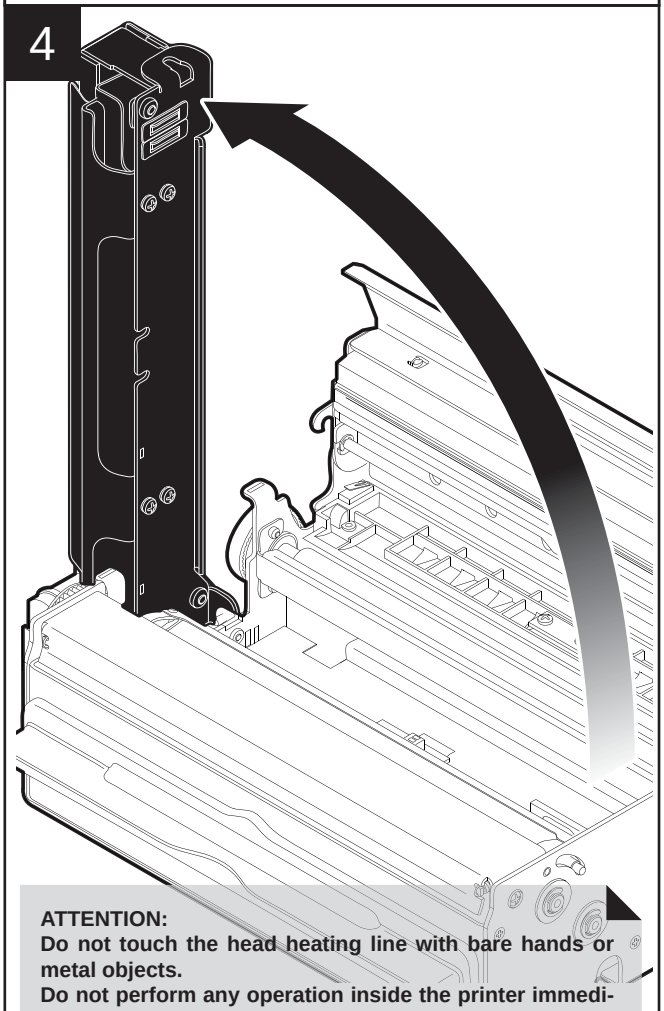
Remove the side cover by
rotating the lock/unlock.

3



Lift up the print head using the
opening slot (A) located on the cover

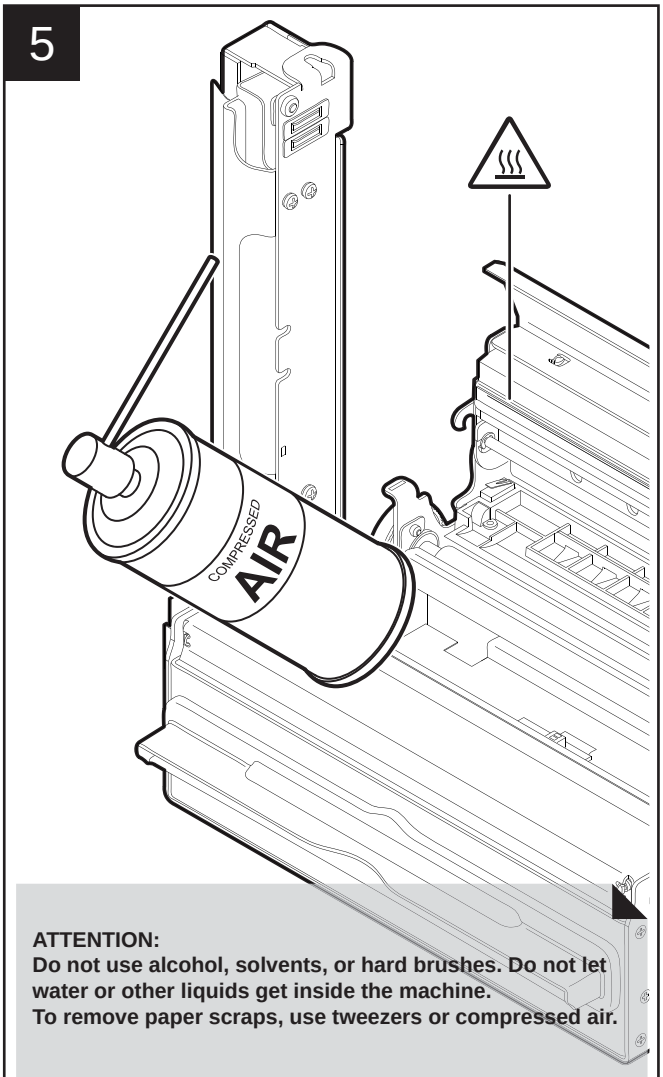
4



ATTENTION:
Do not touch the head heating line with bare hands or metal objects.
Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.

Lift up the autocutter.

5

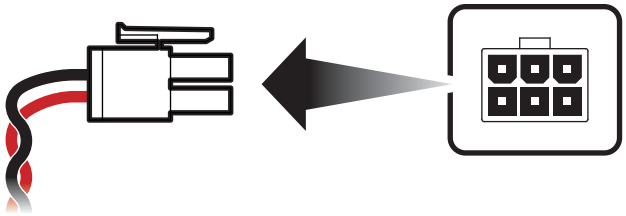


ATTENTION:
Do not use alcohol, solvents, or hard brushes. Do not let water or other liquids get inside the machine.
To remove paper scraps, use tweezers or compressed air.

Remove any scraps of paper and
the accumulated paper dust on the cutter input
by using compressed air.

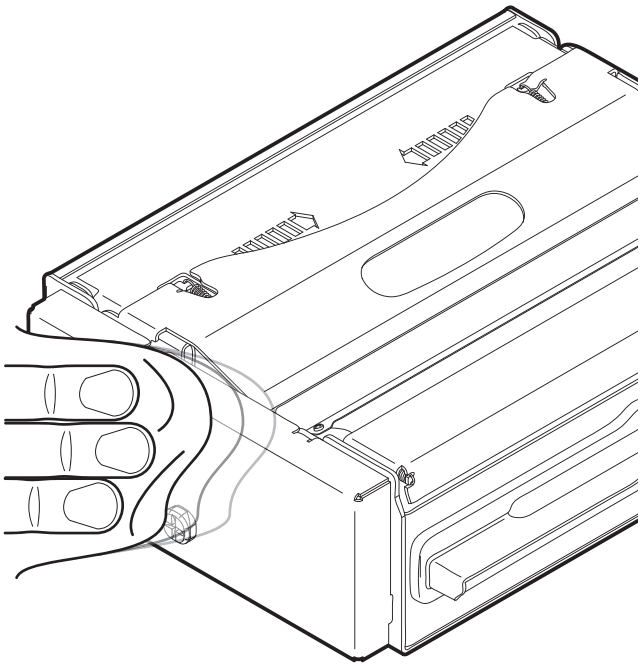
CASE

1

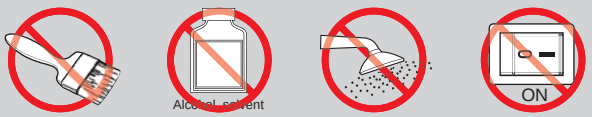


Disconnect the
power supply cable.

2



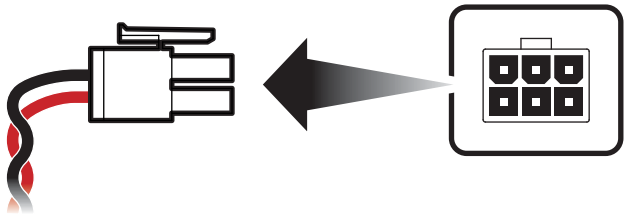
ATTENTION:
Do not use alcohol, solvents, or hard brushes. Do not let water or other liquids get inside the machine.



To clean the machine,
use compressed air or a soft cloth.

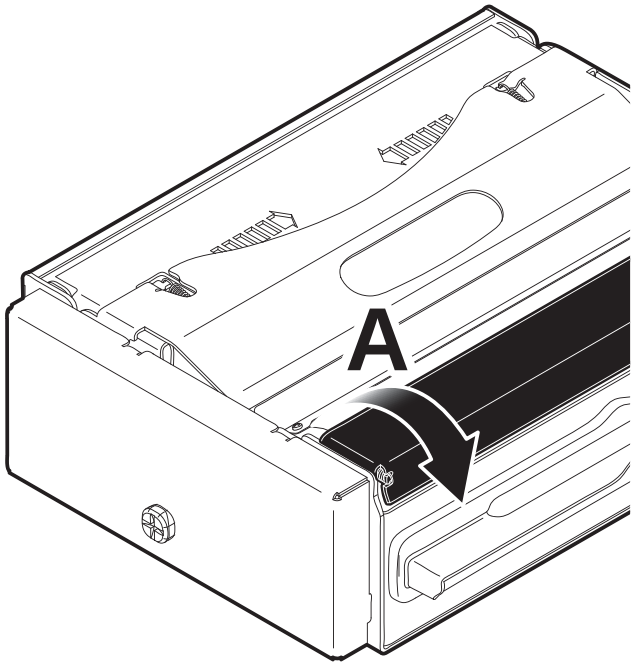
EJECTOR

1



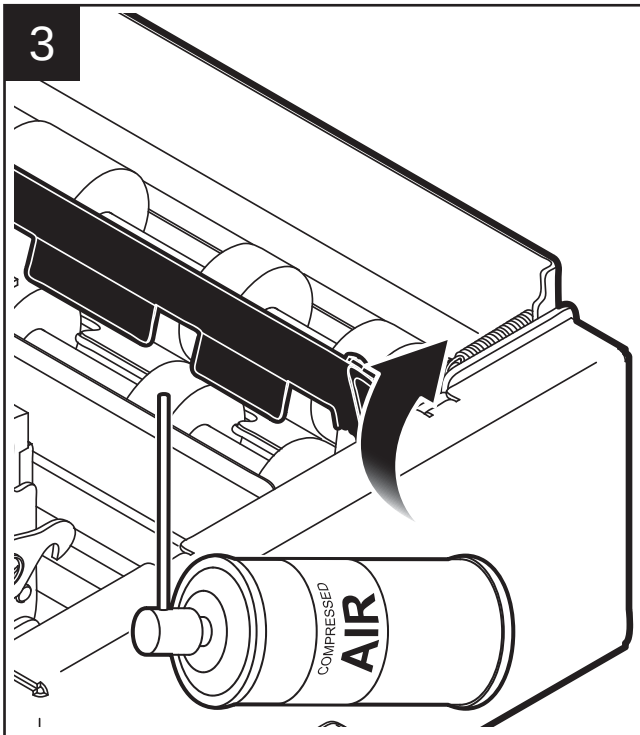
Disconnect the
power supply cable.

2



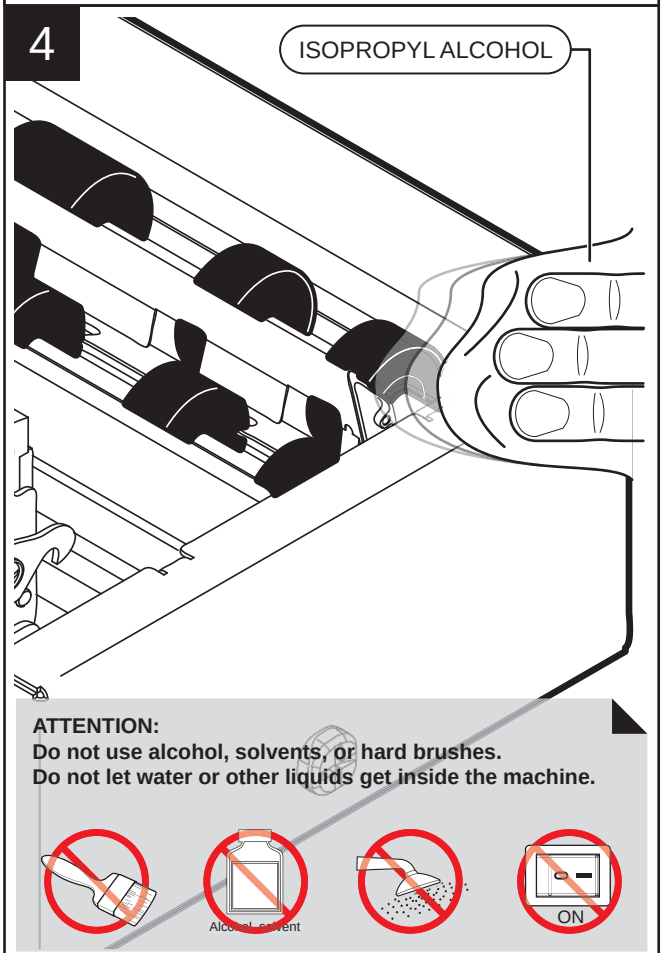
Lift up the ejector cover (A).

3



Lift up the guide and remove any scraps of paper
and the accumulated paper dust inside the ejector.

4



Clean the ejector roller by using
a soft cloth moistened with isopropyl.

6.5 Upgrade firmware

WARNING: During communication between PC/ printer for the firmware update it is strictly forbidden to disconnect the communication cable or to remove the power supply of the devices not to endanger the proper functioning of the printer.

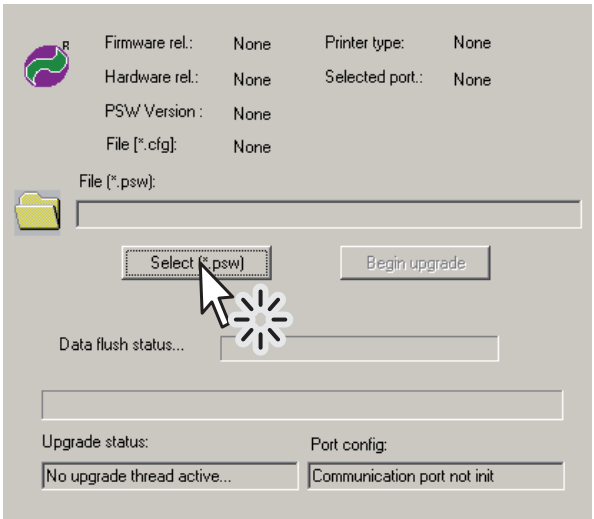
Note: The latest firmware of the printer is available in the download area of the web site www.custom.biz.

Note: Install on the PC used for printer upgrading the UPGCEPRN software available in the download area of the web site www.custom.biz.

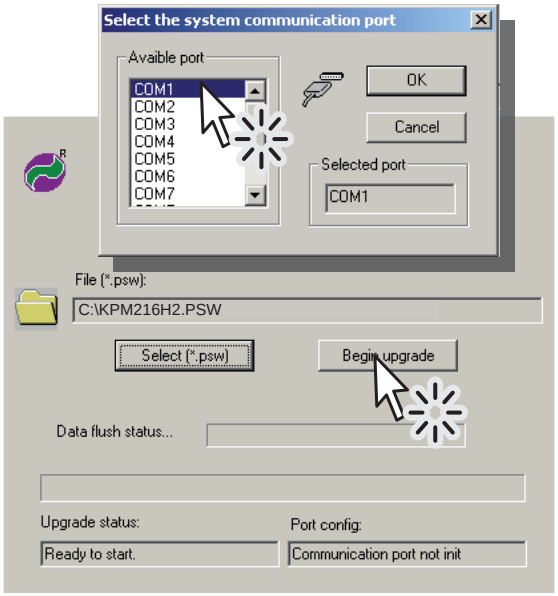
UPDATE VIA SERIAL INTERFACE

Proceed as follows:

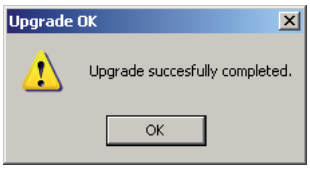
1. Print the SETUP report (see chapter 5).
2. Switch OFF the printer.
3. Connect the printer to the PC using a serial cable (see paragraph 3.5).
4. Switch ON the printer.
5. Start the software UPGCEPRN.
6. Select the update file .PSW location :



7. Select the serial communication port (ex. COM1):



8. Detecting and setting of the parameters necessary for serial communication are performed automatically and then updating begins.
9. After a few minutes a message on the screen warns that the update is completed.



10. Print a new SETUP report to verify the new firmware release (see chapter 5).

UPDATE VIA USB INTERFACE

ATTENTION: Only during the firmware update, the connection between PC and printer must be direct, without the use of wireless HUB.

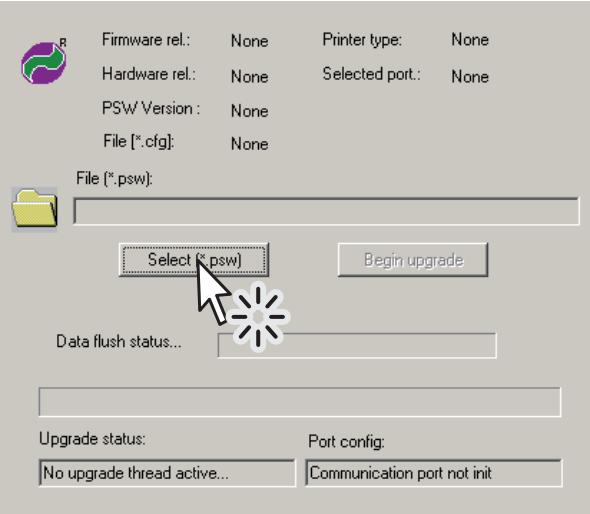
ATTENTION: Only during the firmware update, do not connect or disconnect other USB devices.

NOTE: For communication via USB you must install on PC the printer driver available in the download area of the web site www.custom.biz.

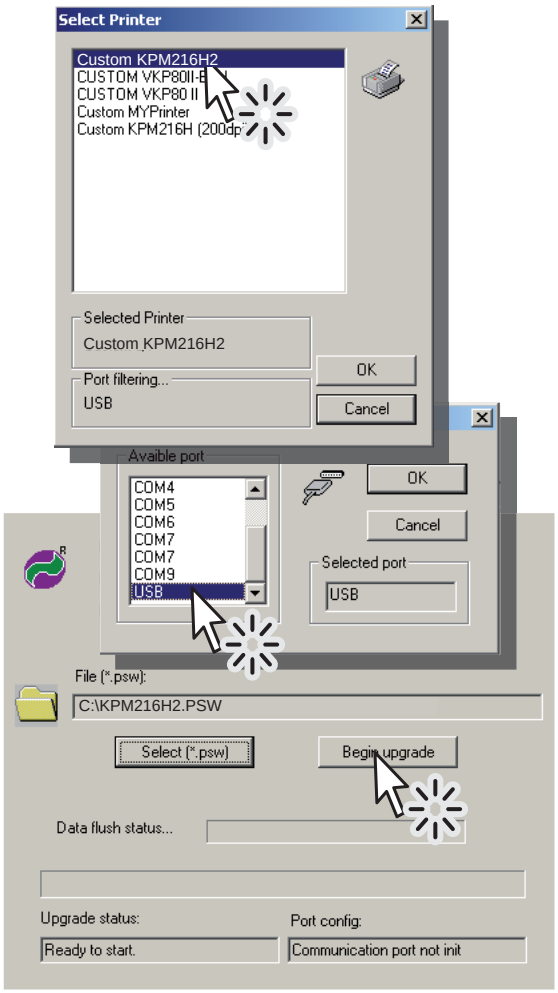
Proceed as follows:

1. Print the SETUP report (see chapter 5).
2. Switch OFF the printer.

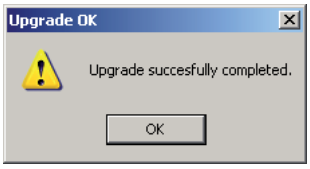
3. Connect the printer to the PC using a USB cable (see paragraph 3.5).
4. Switch ON the printer.
5. Start the software UPGCEPRN.
6. Select the update file .PSW location :



7. Select item USB and then select the USB device among those proposed (ex. KPM216H2):



8. After a few minutes a message on the screen warns that the update is completed.



9. Print a new SETUP report to verify the new firmware release (see chapter 5).

7 SPECIFICATIONS

7.1 Hardware specifications

GENERAL	
Sensors	Head temperature, ‘Paper in presence’ sensor, detector for black mark, ‘Paper out presence’ sensor, ‘Paper under the cutter’ sensor, ‘Printing head open’ sensor external near paper end
Emulations	ESC/POS™, SVELTA
Printing driver	Windows XP, VISTA (32/64bit), Windows 7 (32/64bit), Linux
INTERFACES	
USB connector	12 Mbit/sec (USB 2.0 full speed)
RS232 serial connector	from 1200 to 115200 bps
ETHERNET connector	10 Mbit/sec
MEMORIES	
Receive buffer	64 Kbytes
Flash memory	16 Mbytes
RAM memory	32 Mbytes
Graphic memory	Logos dynamic management (max 2MB graphic memory)
Memory Card SD/MMC	2 Gbytes (max. capacity)
PRINTER	
Resolution	
200 dpi models	203 dpi (8 dot/mm)
300 dpi models	304 dpi (12 dot/mm)
Printing method	Thermal, fixed head
Head life (1)	100 Km / 100M pulses
Printing width	200 mm
Printing mode	Normal, 90°, 180°, 270°
Printing format	Height/Width from 1 to 8, bold, reverse, underlined, italic
Character fonts	
ESC/POS™ emulation	PC437, PC850, PC860, PC863, PC865, PC858 (euro), 2 TrueType font (2)
ESC/POS™ emulation *(models with simplified chinese font)*	PC437, PC850, PC860, PC863, PC865, PC858 (euro), GB2312, 2 TrueType fonts (2)
SVELTA emulation	20 embedded fonts and 2 TrueType fonts (2)

Printable barcode	UPCA, UPCE, EAN13, EAN8, CODE39, ITF, CODABAR, CODE93, CODE128, CODE32, PDF417, DATAMATRIX, AZTEC, QRCODE
Printing speed (1) (3)	
200 dpi models	High Speed = 170 mm/sec Normal = 130 mm/sec High Quality = 95 mm/sec
300 dpi models	High Speed = 120 mm/sec Normal = 110 mm/sec High Quality = 90 mm/sec
PAPER	
Type of paper	Thermal rolls, heat-sensitive side on outside of roll
Paper width	from 194mm to 216mm (8.5” letter)
Paper weight	from 58 g/m^2 to 78 g/m^2
Paper thickness	from 63 µm to 85 µm
Recommended types of paper	KANZAN KF50 e KP460 MITSUBISHI PG5075 e TL4000
Minimum ticket length	min. 160 mm (5)
External roll diameter	max 180 mm (4)
External roll diameter	25 mm (+ 1mm)
Core thickness	2 mm (+1 mm)
Paper end	Not attached to roll core
Core type	Cardboard or plastic
CUTTER SPECIFICATIONS	
Paper cut	Total
Estimated life (1)	300 000 cutter number
PRINTER ELECTRICAL SPECIFICATIONS	
Power supply	24 Vdc ±10% (optional external power supply)
Medium consumption (3)	
200 dpi models	2,5 A
300 dpi models	2,5 A
Stand-by consumption	
200 dpi models	0,1 A
300 dpi models	0,1 A

ELECTRICAL SPECIFICATIONS POWER SUPPLY cod.964GE010000350 (OPTIONAL)	
Power supply voltage	from 100 Vac to 240 Vac
Frequence	from 47 Hz to 63 Hz
Current (output)	max. 9,6 A
Power	230W
ENVIRONMENTAL CONDITIONS	
Operating temperature	from 0°C to +50°C
Relative humidity	from 10% Rh to 85% Rh
Storage temperature	from -20 °C to +70 °C
Storage relative humidity	from 10% Rh to 90% Rh

NOTES:
(1) : Respecting the regular schedule of cleaning for the device components.
(2) : “Veramono.ttf” and “Vera.ttf” are installed on printer flash disk. It is possible to install additional TrueType fonts (see par.12.8).
(3) : Referred to a standard CUSTOM receipt (L=10cm, Density = 12,5% dots on).
(4) : For external rolls diameter higher to Ø100mm it’s recommended to use a paper pretensioning device.
(6) : If the “Short Ticket” parameter is enabled (see the paragraph 5.4), it’s possible to reach the minimum length of 110 mm.

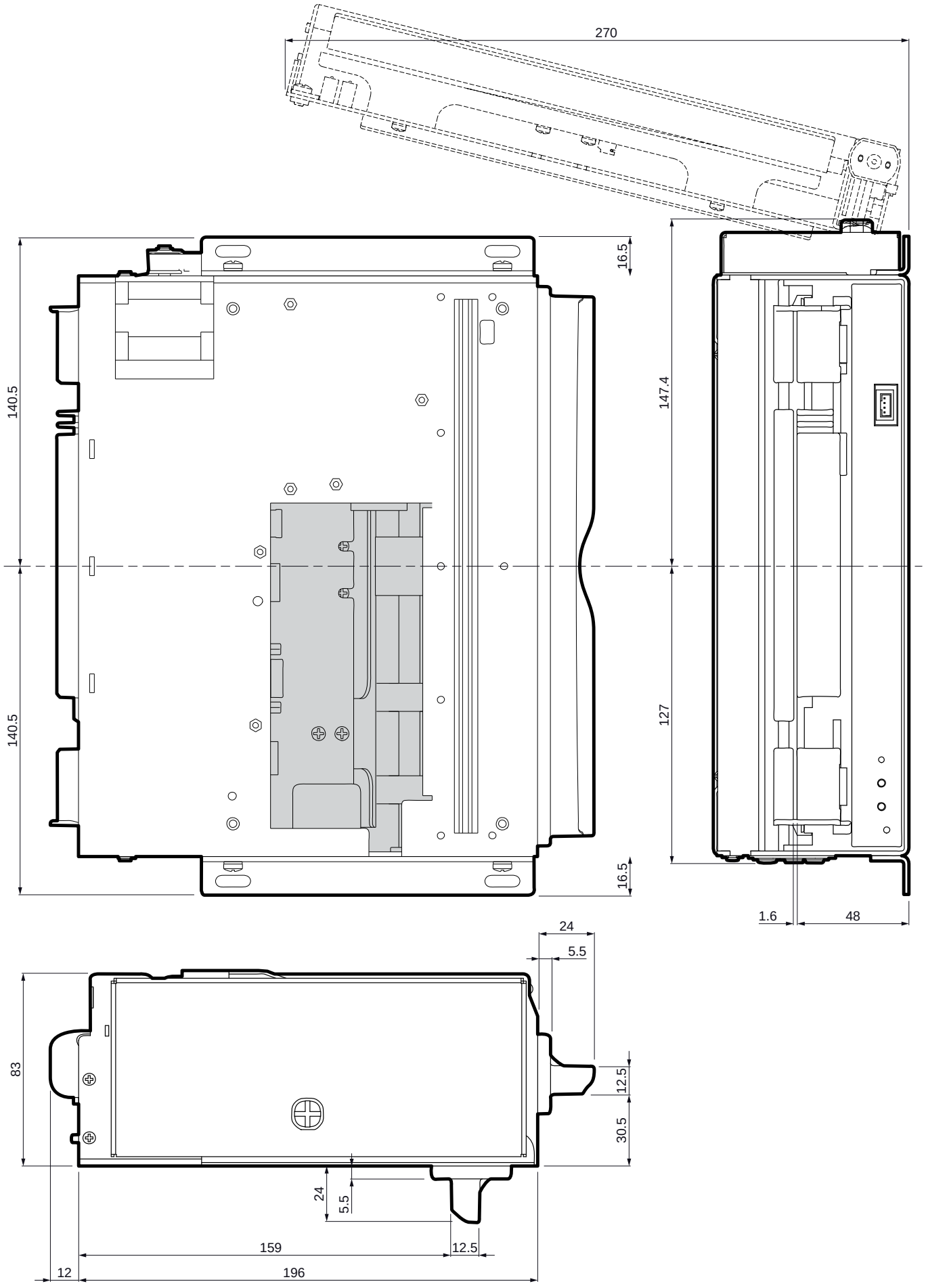
7.2 Character specifications in ESC/POS™ emulation

modelli a 200 dpi			
Character set		3	
Character density	11 cpi	15 cpi	20 cpi
Number of columns	88	123	160
Chars / sec	1760	2480	3200
Lines / sec	20	20	20
Characters (L x H mm)-Normal	2,25 x 3	1,625 x 3	1,25 x 3
modelli a 300 dpi			
Character set		3	
Character density	16 cpi	23 cpi	30 cpi
Number of columns	131	182	236
Chars / sec	3799	5278	6844
Lines / sec	29	29	29
Characters (L x H mm)-Normal	1,525 x 2,373	1,102 x 2,373	0,847 x 2,373

7.3 Printer dimensions

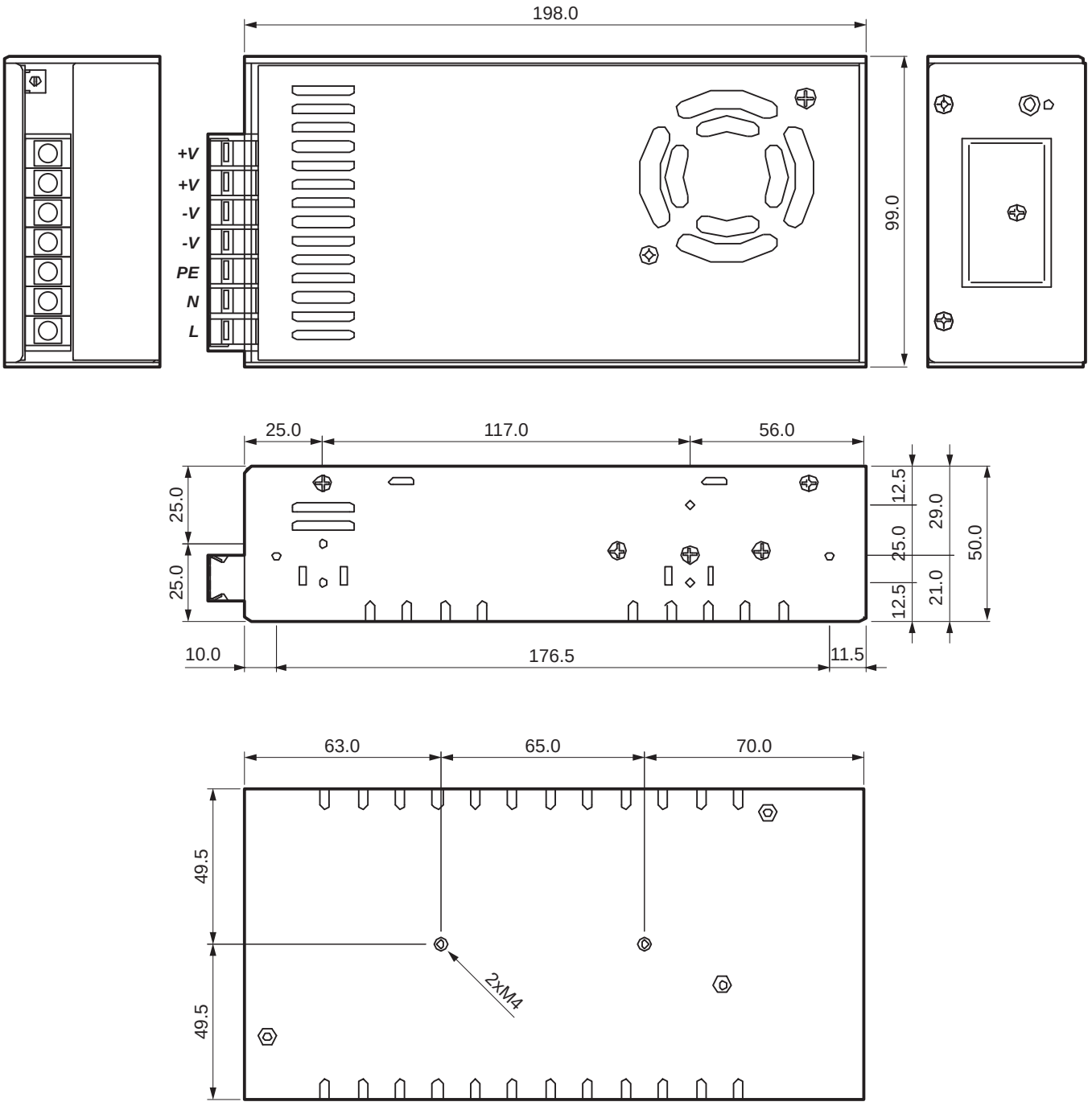
Length	horizontal paper out = 232 mm vertical paper out = 208 mm
Height	horizontal paper out = 83 mm vertical paper out = 107 mm
Width	274,5 mm
Weight	4800 g

NOTE:
Dimensions referred to devices without paper roll.
All the dimensions shown in following figures are in mm.


270
16.5
140.5
147.4
140.5
127
16.5
1.6
48
24
5.5
83
12.5
30.5
24
5.5
159
12.5
12
196

7.4 Power supply dimensions cod.964GE010000350 (optional)

Length	198 mm
Height	50 mm
Width	99 mm

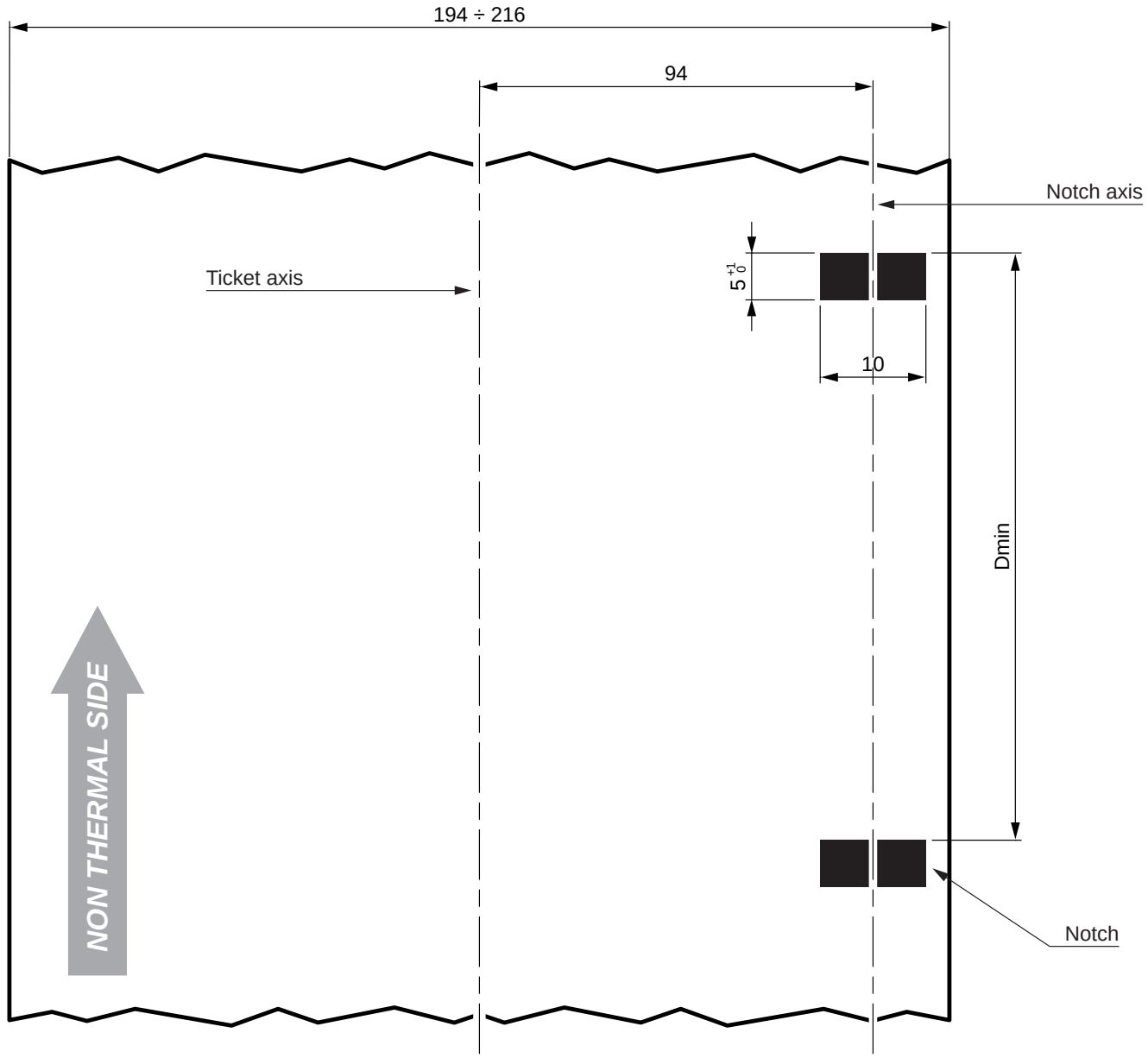


7.5 Specifications for ticket with black mark

Printer is provided with a sensor for the notch detection as described in chapter 10.
The following figure shows an example of paper roll with black mark, where:

Dmin. = minimum notch to notch distance:

min. 150mm (if the “Short Ticket” parameter is disabled)
min. 105mm (if the “Short Ticket” parameter is enabled)



7.6 Character sets in ESC/POS™ emulation

The printer has 3 embedded fonts of varying width: 11, 15, 20 cpi for the 200dpi models and 16, 23, 60 cpi for the 300dpi models.
Each of these fonts offers the following code tables: PC437, PC850, PC860, PC863, PC865, PC858.

PC437 CODE TABLE (Usa, Standard Europe)

Char	SP	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
Hex	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
Dec	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Char	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
Hex	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
Dec	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Char	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hex	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
Dec	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Char	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
Hex	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
Dec	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Char	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Hex	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
Dec	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
Char	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	⌂
Hex	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	007F
Dec	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Char	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
Hex	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	008A	008B	008C	008D	008E	008F
Dec	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Char	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	¢	£	¥	Pts	ƒ
Hex	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	009A	009B	009C	009D	009E	009F
Dec	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Char	á	í	ó	ú	ñ	Ñ	ª	º	¿	⌐	¬	½	¼	¡	«	»
Hex	00A0	00A1	00A2	00A3	00A4	00A5	00A6	00A7	00A8	00A9	00AA	00AB	00AC	00AD	00AE	00AF
Dec	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Char	░	▒	▓	|	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
Hex	00B0	00B1	00B2	00B3	00B4	00B5	00B6	00B7	00B8	00B9	00BA	00BB	00BC	00BD	00BE	00BF
Dec	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Char	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
Hex	00C0	00C1	00C2	00C3	00C4	00C5	00C6	00C7	00C8	00C9	00CA	00CB	00CC	00CD	00CE	00CF
Dec	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Char	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	▉	▄	▌	▐	▀
Hex	00D0	00D1	00D2	00D3	00D4	00D5	00D6	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF
Dec	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Char	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
Hex	00E0	00E1	00E2	00E3	00E4	00E5	00E6	00E7	00E8	00E9	00EA	00EB	00EC	00ED	00EE	00EF
Dec	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Char	≡	±	≥	≤	⌠	⌡	÷	≈	°	∙	·	√	ⁿ	²	■	NBSP
Hex	00F0	00F1	00F2	00F3	00F4	00F5	00F6	00F7	00F8	00F9	00FA	00FB	00FC	00FD	00FE	00FF
Dec	240	241	242	243	244	245	246	247	248	249	250	251	252	253	251	255

PC850 CODE TABLE (Multilingual)

Char	SP	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
Hex	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
Dec	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Char	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
Hex	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
Dec	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Char	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hex	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
Dec	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Char	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
Hex	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
Dec	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Char	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Hex	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
Dec	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
Char	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	⌂
Hex	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	007F
Dec	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Char	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
Hex	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	008A	008B	008C	008D	008E	008F
Dec	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Char	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	×	ƒ
Hex	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	009A	009B	009C	009D	009E	009F
Dec	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Char	á	í	ó	ú	ñ	Ñ	ª	º	¿	®	¬	½	¼	¡	«	»
Hex	00A0	00A1	00A2	00A3	00A4	00A5	00A6	00A7	00A8	00A9	00AA	00AB	00AC	00AD	00AE	00AF
Dec	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Char	░	▒	▓	|	┤	Á	Â	À	©	╣	║	╗	╝	¢	¥	┐
Hex	00B0	00B1	00B2	00B3	00B4	00B5	00B6	00B7	00B8	00B9	00BA	00BB	00BC	00BD	00BE	00BF
Dec	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Char	└	┴	┬	├	─	┼	ã	Ã	╚	╔	╩	╦	╠	═	╬	¤
Hex	00C0	00C1	00C2	00C3	00C4	00C5	00C6	00C7	00C8	00C9	00CA	00CB	00CC	00CD	00CE	00CF
Dec	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Char	ð	Ð	Ê	Ë	È	ı	Í	Î	Ï	┘	┌	▉	▄	¦	Ì	▀
Hex	00D0	00D1	00D2	00D3	00D4	00D5	00D6	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF
Dec	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Char	Ó	ß	Ô	Ò	õ	Õ	µ	þ	Þ	Ú	Û	Ù	ý	Ý	¯	´
Hex	00E0	00E1	00E2	00E3	00E4	00E5	00E6	00E7	00E8	00E9	00EA	00EB	00EC	00ED	00EE	00EF
Dec	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Char	SHY	±	‗	¾	¶	§	÷	¸	°	¨	·	¹	³	²	■	NBSP
Hex	00F0	00F1	00F2	00F3	00F4	00F5	00F6	00F7	00F8	00F9	00FA	00FB	00FC	00FD	00FE	00FF
Dec	240	241	242	243	244	245	246	247	248	249	250	251	252	253	251	255

PC860 CODE TABLE (Portuguese)

Char	SP	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
Hex	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
Dec	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Char	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
Hex	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
Dec	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Char	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hex	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
Dec	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Char	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
Hex	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
Dec	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Char	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Hex	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
Dec	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
Char	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	⌂
Hex	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	007F
Dec	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Char	Ç	ü	é	â	ã	à	Á	ç	ê	Ê	è	Í	Ô	ì	Ã	Â
Hex	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	008A	008B	008C	008D	008E	008F
Dec	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Char	É	À	È	ô	ö	ò	Ú	ù	Ì	Õ	Ü	¢	£	Ù	Pts	Ó
Hex	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	009A	009B	009C	009D	009E	009F
Dec	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Char	á	í	ó	ú	ñ	Ñ	ª	º	¿	Ò	¬	½	¼	¡	«	»
Hex	00A0	00A1	00A2	00A3	00A4	00A5	00A6	00A7	00A8	00A9	00AA	00AB	00AC	00AD	00AE	00AF
Dec	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Char	▒	▒	▓	┃	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
Hex	00B0	00B1	00B2	00B3	00B4	00B5	00B6	00B7	00B8	00B9	00BA	00BB	00BC	00BD	00BE	00BF
Dec	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Char	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
Hex	00C0	00C1	00C2	00C3	00C4	00C5	00C6	00C7	00C8	00C9	00CA	00CB	00CC	00CD	00CE	00CF
Dec	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Char	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	▉	▄	▌	▐	▀
Hex	00D0	00D1	00D2	00D3	00D4	00D5	00D6	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF
Dec	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Char	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
Hex	00E0	00E1	00E2	00E3	00E4	00E5	00E6	00E7	00E8	00E9	00EA	00EB	00EC	00ED	00EE	00EF
Dec	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Char	≡	±	≥	≤	⌠	⌡	÷	≈	°	∙	·	√	n	2	■	NBSP
Hex	00F0	00F1	00F2	00F3	00F4	00F5	00F6	00F7	00F8	00F9	00FA	00FB	00FC	00FD	00FE	00FF
Dec	240	241	242	243	244	245	246	247	248	249	250	251	252	253	251	255

PC863 CODE TABLE (Canadian, French)

Char	SP	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
Hex	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
Dec	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Char	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
Hex	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
Dec	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Char	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hex	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
Dec	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Char	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
Hex	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
Dec	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Char	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Hex	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
Dec	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
Char	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	⌂
Hex	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	007F
Dec	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Char	Ç	ü	é	â	Â	à	¶	ç	ê	ë	è	ï	î	‗	À	§
Hex	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	008A	008B	008C	008D	008E	008F
Dec	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Char	É	È	Ê	ô	Ë	Ï	û	ù	¤	Ô	Ü	¢	£	Ù	Û	ƒ
Hex	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	009A	009B	009C	009D	009E	009F
Dec	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Char	¦	´	ó	ú	¨	¸	³	¯	Î	⌐	¬	½	¼	¾	«	»
Hex	00A0	00A1	00A2	00A3	00A4	00A5	00A6	00A7	00A8	00A9	00AA	00AB	00AC	00AD	00AE	00AF
Dec	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Char	░	▒	▓	│	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
Hex	00B0	00B1	00B2	00B3	00B4	00B5	00B6	00B7	00B8	00B9	00BA	00BB	00BC	00BD	00BE	00BF
Dec	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Char	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
Hex	00C0	00C1	00C2	00C3	00C4	00C5	00C6	00C7	00C8	00C9	00CA	00CB	00CC	00CD	00CE	00CF
Dec	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Char	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	▉	▄	▌	▐	▀
Hex	00D0	00D1	00D2	00D3	00D4	00D5	00D6	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF
Dec	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Char	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
Hex	00E0	00E1	00E2	00E3	00E4	00E5	00E6	00E7	00E8	00E9	00EA	00EB	00EC	00ED	00EE	00EF
Dec	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Char	≡	±	≥	≤	⌠	⌡	÷	≈	°	∙	·	√	n	²	■	NBSP
Hex	00F0	00F1	00F2	00F3	00F4	00F5	00F6	00F7	00F8	00F9	00FA	00FB	00FC	00FD	00FE	00FF
Dec	240	241	242	243	244	245	246	247	248	249	250	251	252	253	251	255

PC865 CODE TABLE (Nordic)

Char	SP	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
Hex	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
Dec	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Char	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
Hex	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
Dec	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Char	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hex	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
Dec	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Char	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
Hex	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
Dec	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Char	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Hex	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
Dec	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
Char	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	⌂
Hex	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	007F
Dec	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Char	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
Hex	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	008A	008B	008C	008D	008E	008F
Dec	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Char	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	Pts	ƒ
Hex	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	009A	009B	009C	009D	009E	009F
Dec	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Char	á	í	ó	ú	ñ	Ñ	ª	º	¿	⌐	¬	½	¼	¡	«	¤
Hex	00A0	00A1	00A2	00A3	00A4	00A5	00A6	00A7	00A8	00A9	00AA	00AB	00AC	00AD	00AE	00AF
Dec	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Char	░	▒	▓	│	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
Hex	00B0	00B1	00B2	00B3	00B4	00B5	00B6	00B7	00B8	00B9	00BA	00BB	00BC	00BD	00BE	00BF
Dec	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Char	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
Hex	00C0	00C1	00C2	00C3	00C4	00C5	00C6	00C7	00C8	00C9	00CA	00CB	00CC	00CD	00CE	00CF
Dec	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Char	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	▉	▄	▌	▐	▀
Hex	00D0	00D1	00D2	00D3	00D4	00D5	00D6	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF
Dec	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Char	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
Hex	00E0	00E1	00E2	00E3	00E4	00E5	00E6	00E7	00E8	00E9	00EA	00EB	00EC	00ED	00EE	00EF
Dec	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Char	≡	±	≥	≤	⌠	⌡	÷	≈	°	∙	·	√	n	2	■	NBSP
Hex	00F0	00F1	00F2	00F3	00F4	00F5	00F6	00F7	00F8	00F9	00FA	00FB	00FC	00FD	00FE	00FF
Dec	240	241	242	243	244	245	246	247	248	249	250	251	252	253	251	255

PC858 CODE TABLE (Euro symbol)

Char	SP	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
Hex	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
Dec	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Char	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
Hex	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
Dec	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Char	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hex	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
Dec	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Char	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
Hex	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
Dec	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Char	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Hex	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
Dec	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
Char	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	⌂
Hex	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	007F
Dec	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Char	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
Hex	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	008A	008B	008C	008D	008E	008F
Dec	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Char	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	×	ƒ
Hex	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	009A	009B	009C	009D	009E	009F
Dec	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Char	á	í	ó	ú	ñ	Ñ	ª	º	¿	®	¬	½	¼	¡	«	»
Hex	00A0	00A1	00A2	00A3	00A4	00A5	00A6	00A7	00A8	00A9	00AA	00AB	00AC	00AD	00AE	00AF
Dec	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Char	░	▒	▓	|	┤	Á	Â	À	©	╣	║	╗	╝	¢	¥	┐
Hex	00B0	00B1	00B2	00B3	00B4	00B5	00B6	00B7	00B8	00B9	00BA	00BB	00BC	00BD	00BE	00BF
Dec	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Char	└	┴	┬	├	─	┼	ã	Ã	╚	╔	╩	╦	╠	═	╬	¤
Hex	00C0	00C1	00C2	00C3	00C4	00C5	00C6	00C7	00C8	00C9	00CA	00CB	00CC	00CD	00CE	00CF
Dec	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Char	ð	Ð	Ê	Ë	È	€	Í	Î	Ï	┘	┌	▉	▄	¦	Ì	▀
Hex	00D0	00D1	00D2	00D3	00D4	00D5	00D6	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF
Dec	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Char	Ó	ß	Ô	Ò	õ	Õ	µ	þ	Þ	Ú	Û	Ù	ý	Ý	¯	´
Hex	00E0	00E1	00E2	00E3	00E4	00E5	00E6	00E7	00E8	00E9	00EA	00EB	00EC	00ED	00EE	00EF
Dec	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Char	SHY	±	‗	¾	¶	§	÷	¸	°	¨	·	¹	³	²	■	NBSP
Hex	00F0	00F1	00F2	00F3	00F4	00F5	00F6	00F7	00F8	00F9	00FA	00FB	00FC	00FD	00FE	00FF
Dec	240	241	242	243	244	245	246	247	248	249	250	251	252	253	251	255

NOTE: To print the Euro (€) symbol, the command sequence is: $1B, $74, $13, $D5 (see Command Reference).

In ESC/POS™ emulation, it is possible to use TrueType fonts. To be used, a TrueType font must be monospace type (every character of the font must have the same dimension). The check is made by the printer when the font is selected. TrueType fonts will be automatically scaled by the printer in order to obtain the same available width for the embedded fonts (11, 15 and 20 cpi for the 200dpi models and 16, 23 and 30 cpi for the 300dpi models).

The quality of TrueType fonts and the correct positioning into the printable area will result from the font producers and the font implementation.
The available code tables are : PC437, PC850, PC860, PC863, PC865, PC858, PC866, PC852, WPC1252.

For the correct printing of the code tables, it is necessary that the selected TrueType font contains all the characters in the tables. Otherwise, the '□' symbol will be printed instead the missing character.
All commands for printing configuration are usable both with TrueType fonts and with embedded fonts.
It is possible to address the TrueType font respects the UNICODE™ standard (see www.unicode.org), by using UTF-8 or UTF-16 encoding.

7.7 Character sets in SVELTA emulation

In SVELTA emulation the printer has 20 embedded fonts of varying width which may be accessed through control characters (see commands description in SVELTA emulation of Command Reference). The following list shows the font available and relative dimensions in dot:

- Font HEL8PT8 (A) Proportional Font with fixed height (H = 28 dot)
- Font HEL10PT8 (A) Proportional Font with fixed height (H = 34 dot)
- Font HEL14PT8 (A) Proportional Font with fixed height (H = 50 dot)
- Font HEL16PT8 (A) Proportional Font with fixed height (H = 55 dot)
- Font 18x24 (Font 18x24 in ESC/POS emulation)
- Font 14x24 (Font 14x24 in ESC/POS emulation)
- Font 10x24 (Font 10x24 in ESC/POS emulation)
- Font 8x12 (B) Fixed Font
- Font 8x12-2 (B) Fixed Font
- Font 12x12 (B) Fixed Font
- Font 14x11 (B) Fixed Font
- Font 16x24 (B) Fixed Font
- Font 16x24_1 (B) (C) Fixed Font
- Font 16x24_2 (B) (C) Fixed Font
- Font 20x15 (B) Fixed Font
- Font 28x20 (B) Fixed Font
- Font 14x24_1 (B) (C) Fixed Font
- Font 16x24CN (B) (C) Fixed Font
- Font OCRB (20x32) (B) Fixed Font

For further informations to characters representations print directly the Font Test(D).

NOTES:

(A) A proportional font is a font in which different characters have different pitches (widths).

(B) A fixed font is the opposite of a proportional font and is a fixed-pitch font.

(C) The fonts with the same name and dimension contain different characters in different positions from theirs.

(D) During power-up, if the FORM FEED (FF) key is held down, the printer executes the FONT TEST.

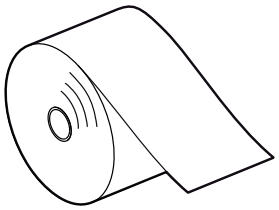
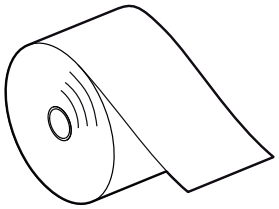
In SVELTA emulation, it is possible to use TrueType fonts. True Type fonts are printable with every angle of rotation and in bold, reverse, italic and underlined mode.

It is possible to address the TrueType font respects the UNICODE™ standard (see www.unicode.org), by using UTF-8 or UTF-16 encoding.

For the correct printing of the code tables, it is necessary that the selected TrueType font contains all the characters in the tables. Otherwise, the '□' symbol will be printed instead the missing character.

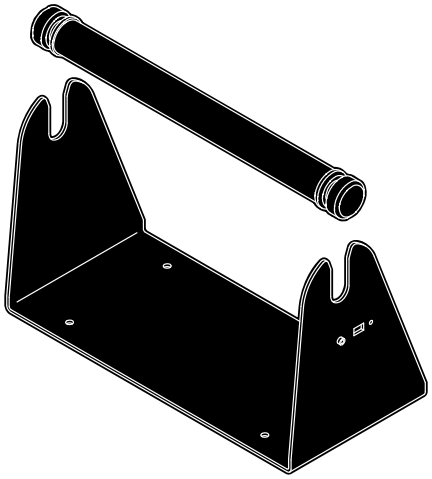
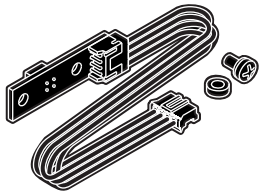
8 CONSUMABLES

The following table shows the list of available consumables for device:

DESCRIPTION	CODE
THERMAL PAPER ROLL weight = 70g/m^2 width = 210mm Ø external = 140mm Ø core = 25mm	**67300000000321** 
THERMAL PAPER ROLL weight = 70g/m^2 width = 216mm Ø external = 140mm Ø core = 25mm	**67300000000327** 

9 ACCESSORIES

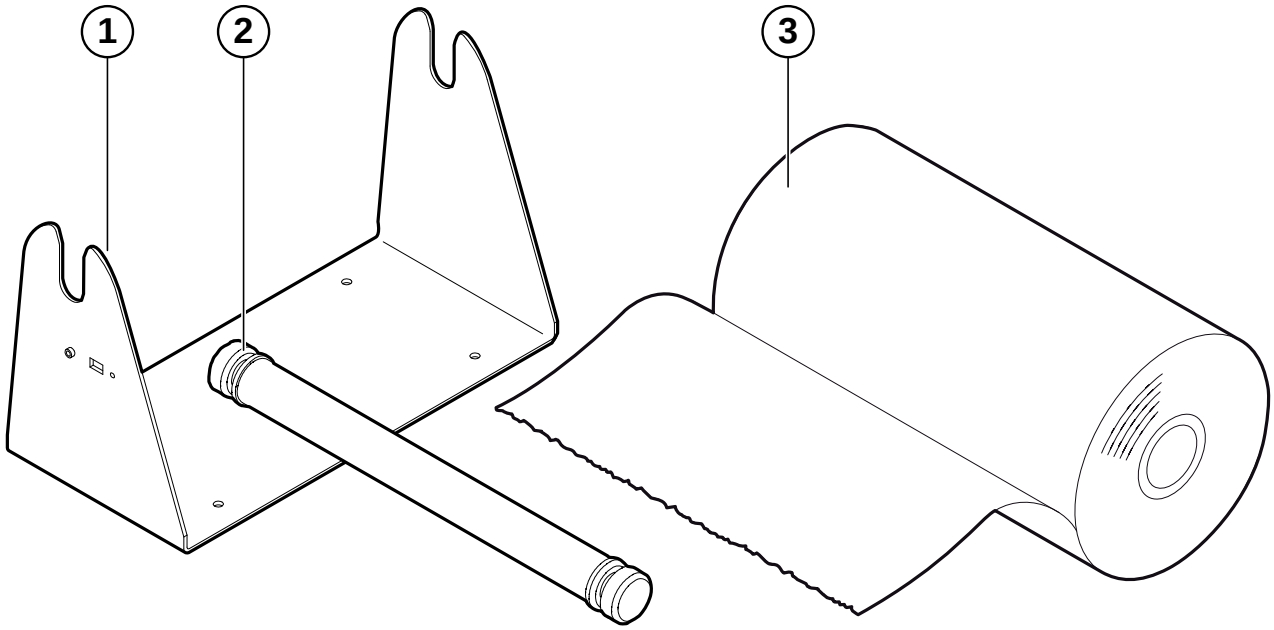
The following table shows the list of available accessories for device:

DESCRIPTION	CODE
POWER SUPPLY (for technical specifications, see the paragraph 7.1)	**964GE010000350**
PAPER ROLL HOLDER (see paragraph 9.1)	**974AS010000303** 
KIT FOR NEAR PAPER END (see paragraph 9.2)	**26300000000602** 

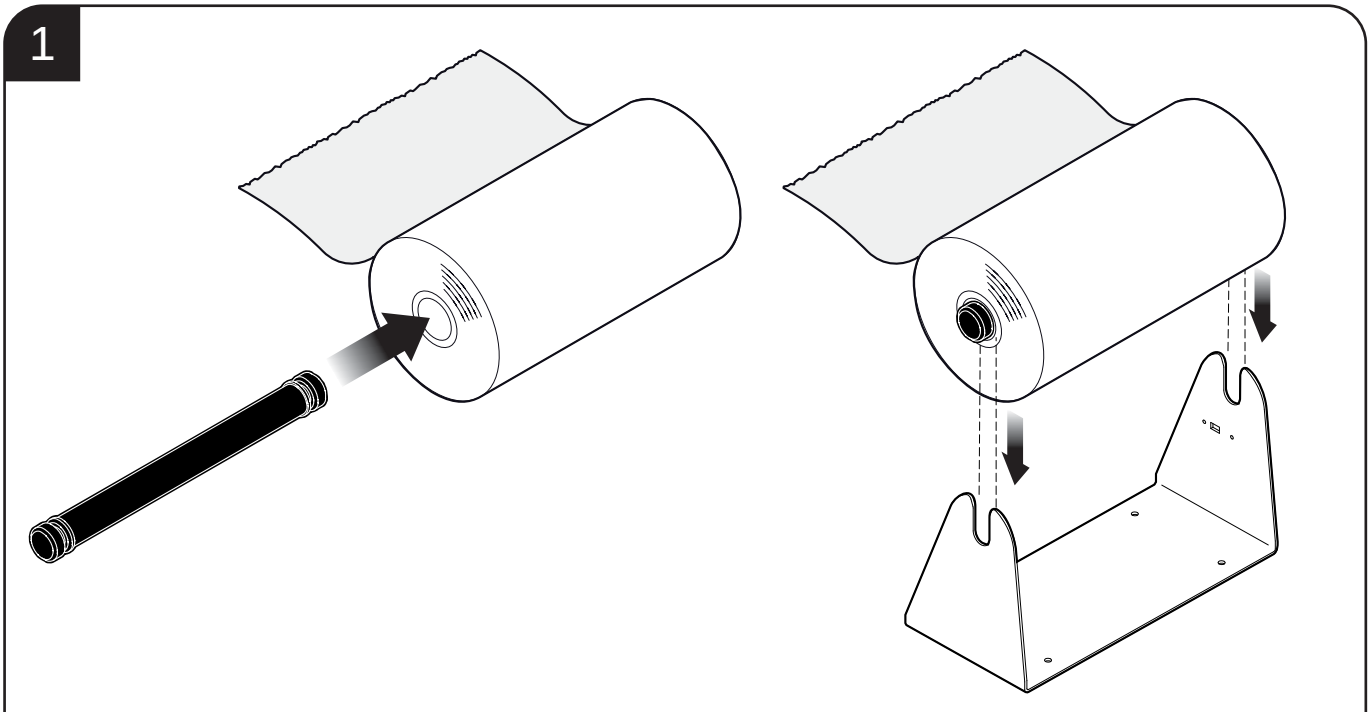
9.1 External paper roll holder

For the device is available an external paper roll holder kit (cod.974AS010000303) supplied as an accessory. The kit makes it possible to use paper rolls with larger diameter (Øext.180mm max).
The kit includes:

1. Paper holder support
2. Paper roll pin
3. Paper roll 210 d=140

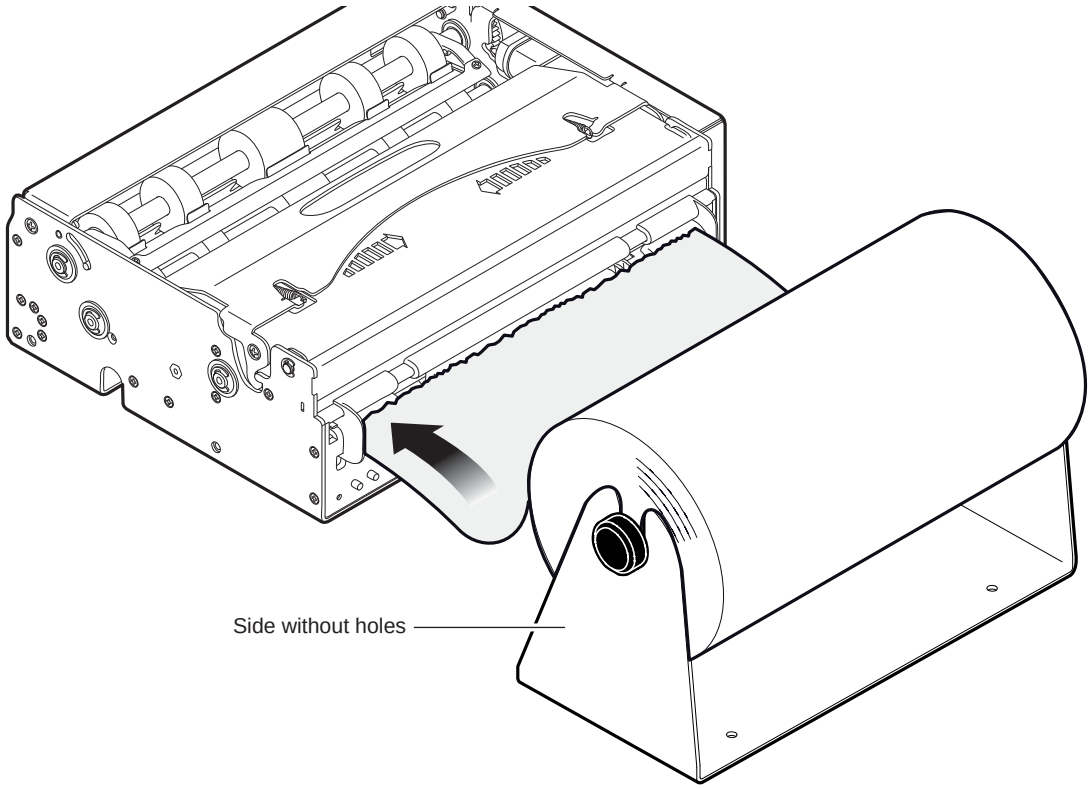


To assemble the roll holder support, proceed as follows:



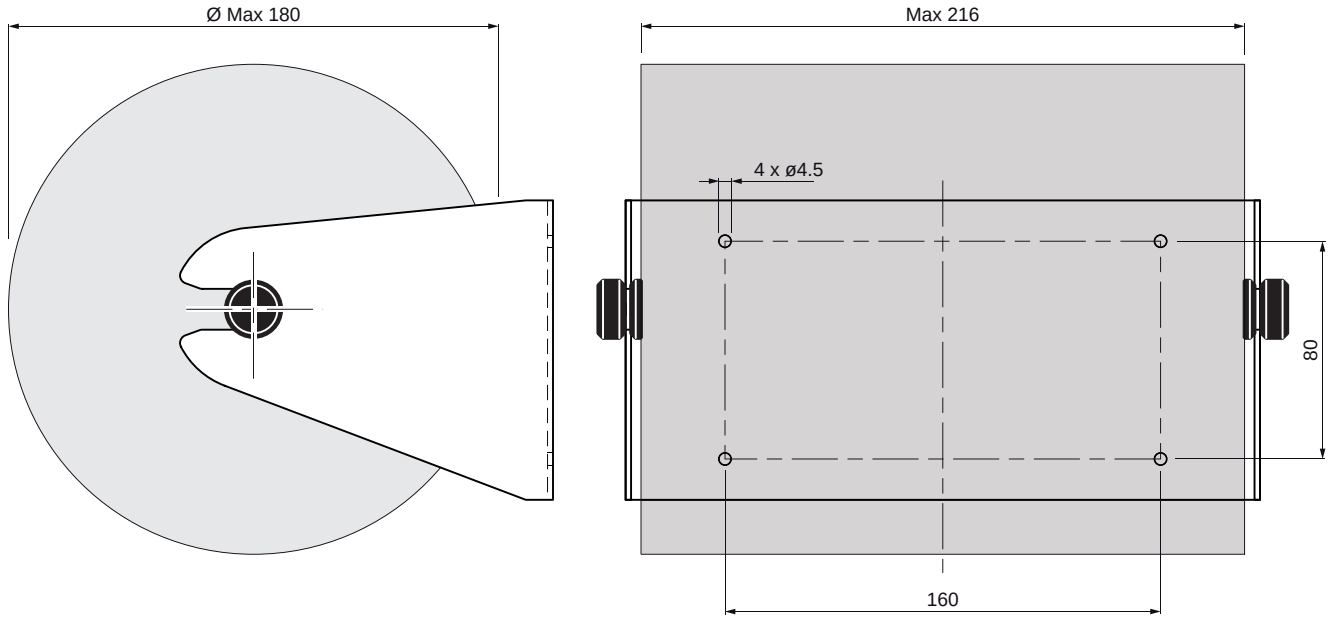
Insert the pin in the paper roll and then
put the assembled roll on the support.

2



Place the paper roll holder behind the printer.
To load paper refer to the instructions indicated in par. 4.3 of this manual

PAPER ROLL HOLDER DIMENSIONS AND PAPER ROLL SPECIFICATIONS (in mm)

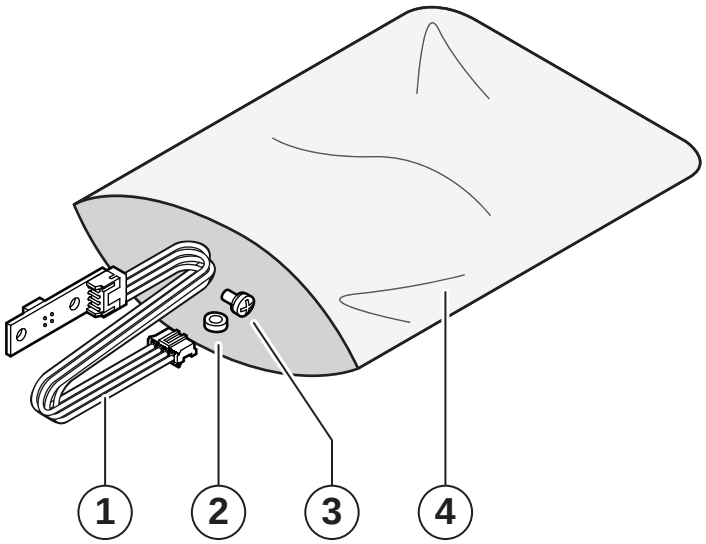


NOTE:
For external rolls diameter higher to 100mm it's recommended to use a paper pre-tensioning device.

9.2 Kit for near paper end

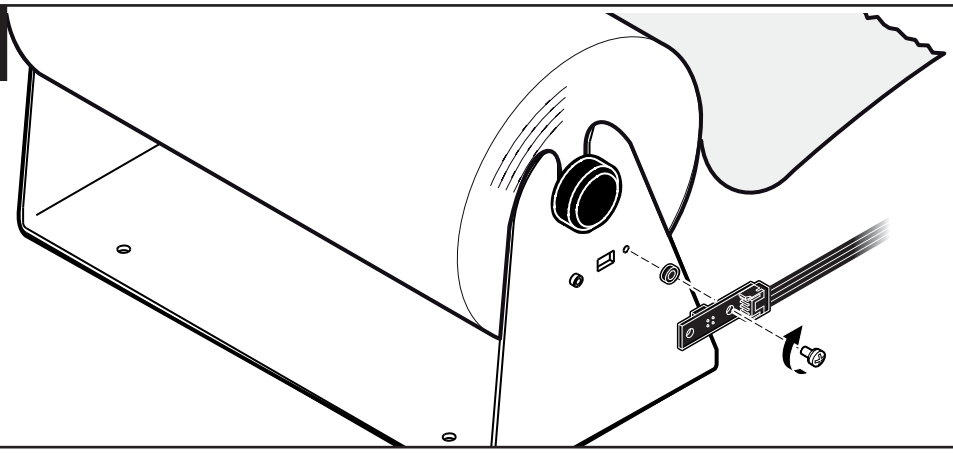
For the device is available a kit of wirings with near paper end sensor 26300000000602 (supplied as an accessory).

The kit includes:
1. Wiring assembled with near paper end sensors board
2. Plastic spacer
3. Fixing screw
4. Shield



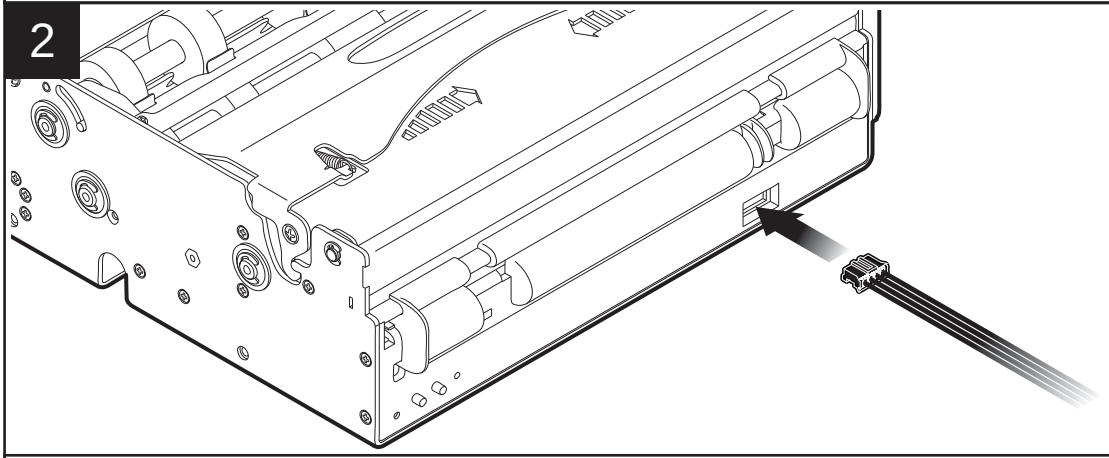
To assemble the near paper end sensor to roll holder support, proceed as follows:

1



Fix the near paper end circuit as shown using the spacer and the screw

2



Connect the near paper end cable with the printer.

10 ALIGNMENT

Device is provided with a sensor for the use of alignment notch in order to handle:
- roll of tickets with pre-printed fields and a fixed length;

The alignment notch may be formed by
- black mark printed on paper (see par.7.5);

All alignment sensor is a “reflection” sensor: this kind of sensor emits a band of light and detects the quantity of light reflected to it. The presence of the notch is therefore detected by the amount of light that returns to the sensor, considering that the light is reflected by the white paper and absorbed by the black mark.

The following paragraphs show how to correctly set the configuration parameters of device in order to assure the alignment.

10.1 Enable alignment

To guarantee the alignment, it is necessary to enable the parameter “Notch alignment” during the Setup procedure (see chapter 5).

10.2 Calibration

The sensor calibration occurs automatically and consists in adjusting the quantity of light emitted to match the degree of whiteness of the paper used and the degree of black of the mark printed on paper.

The device automatically performs the self-calibration during the Setup procedure only if the “Notch alignment” parameter is set to “Enabled” (see chapter 5).

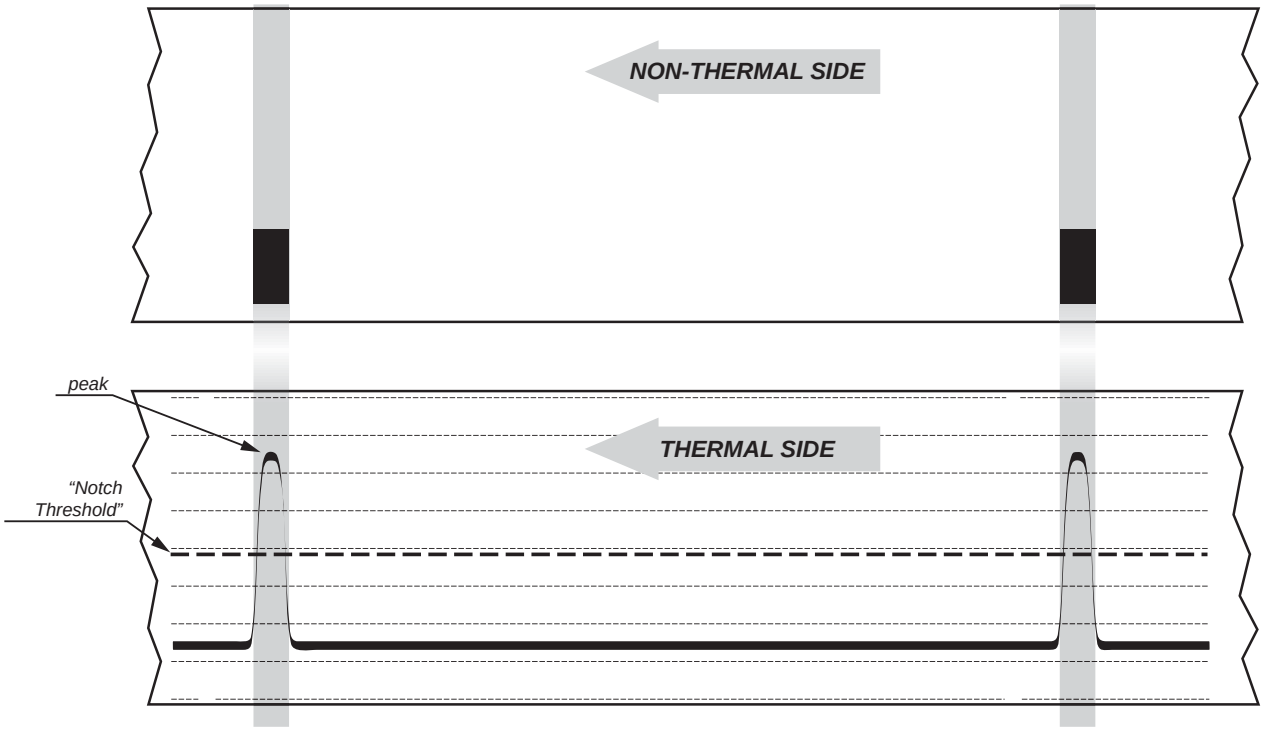
When self-calibration starts, the device performs some paper feeds and then it prints the calibration result and the value of the PWM duty-cicle of the alignment sensor driver so that it can be perform an optimal notch detection:

```
Autosetting Notch  : OK
PWM Duty Cycle : 85.3%
```

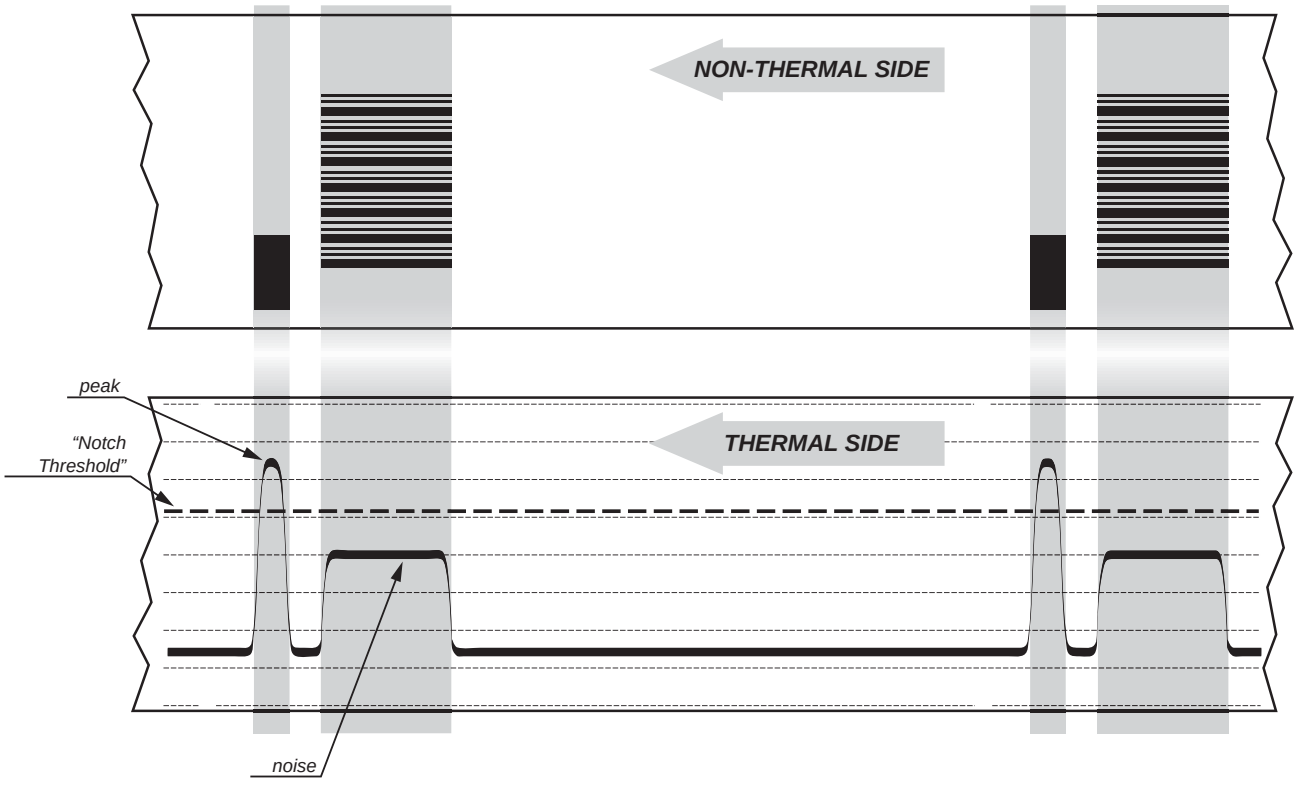
The “Autosetting Notch” parameter indicates the result of the self-calibration procedure; OK will appear if it has been successful, NOT OK will appear if the procedure has failed.

After the printing of the procedure result, the device offers the execution of the function of paper characterization “Characterize Paper” and the change of the “Notch Threshold” parameter which represents the detection threshold of the notch.
Choosing the “Yes” value for the “Characterize Paper” parameter, the device prints a graphic representation (see following figures) of the outgoing voltage of the alignment sensor (expressed as a percentage) and the “Notch Threshold” value.
This graphic representation is useful to set the most suitable value to assign to the “Notch Threshold” parameter and then to better identify the optimal threshold value which takes into account the variations of the signal and the small oscillations around zero.

The following figure shows an example of paper with the non-thermal paper printed with black marks: the outgoing voltage is constant while passing the white paper between two notches and presents a peak at each black mark.
In this case, the optimal value for the “Notch Threshold” parameter is placed about half of the peak.



The following figure shows an example of paper with the non-thermal paper printed with black marks and other graphics (for example, a barcode): the outgoing voltage is constant while passing the white paper between two notches, presents a peak at each black mark and presents some “noise” at each barcode.
In this case, the optimal value for the “Notch Threshold” parameter is located about halfway between the peak value and the maximum value of the “noise”.



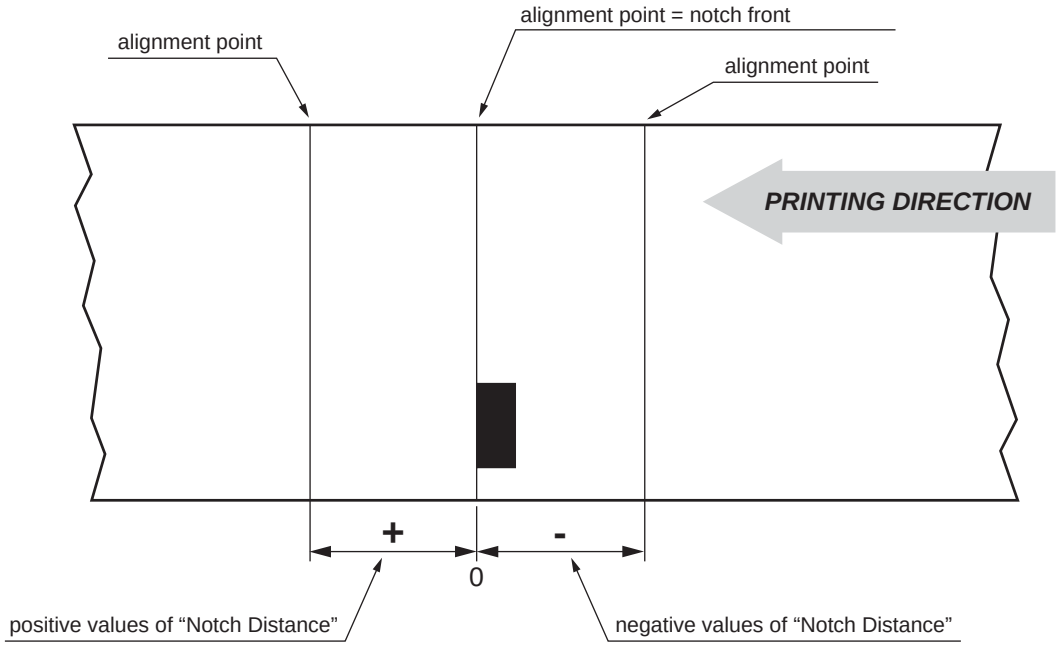
If the maximum value of “noise” read by the sensor is very close to the peak value, it might be difficult to place the value of the “Notch Threshold” at an intermediate point. In these cases, it is mandatory that the portion of paper between the point of printing end and the front notch is completely white (no graphics). In this way, the only next graphic detected by the sensor for alignment after the printing end will be the notch.

10.3 Alignment parameters

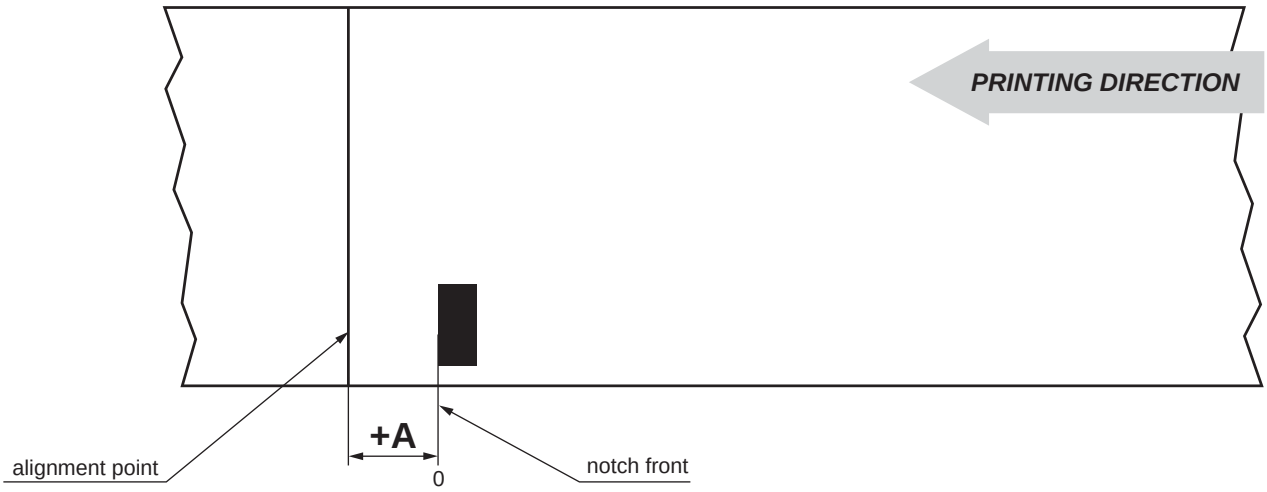
The “alignment point” is defined as the position inside the ticket to use for the notch alignment.
The distance between the notch edge and the alignment point is defined as “Notch Distance”.

Referring to the front of the notch, the value of “Notch Distance” value varies from -20mm minimum and +24mm maximum.

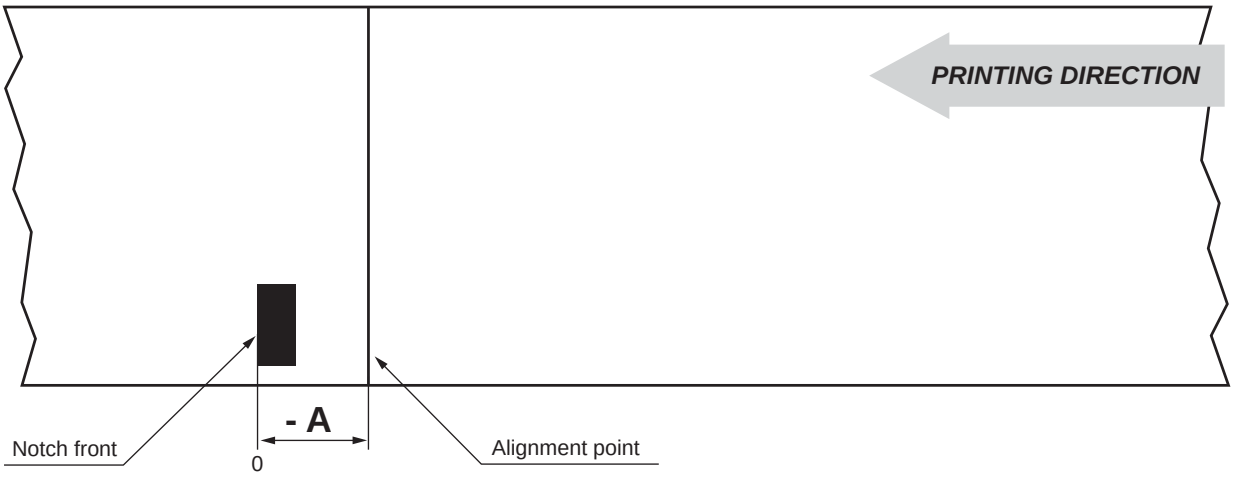
If the “Notch Distance” value is set to 0, the alignment point is set at the beginning of the notch.



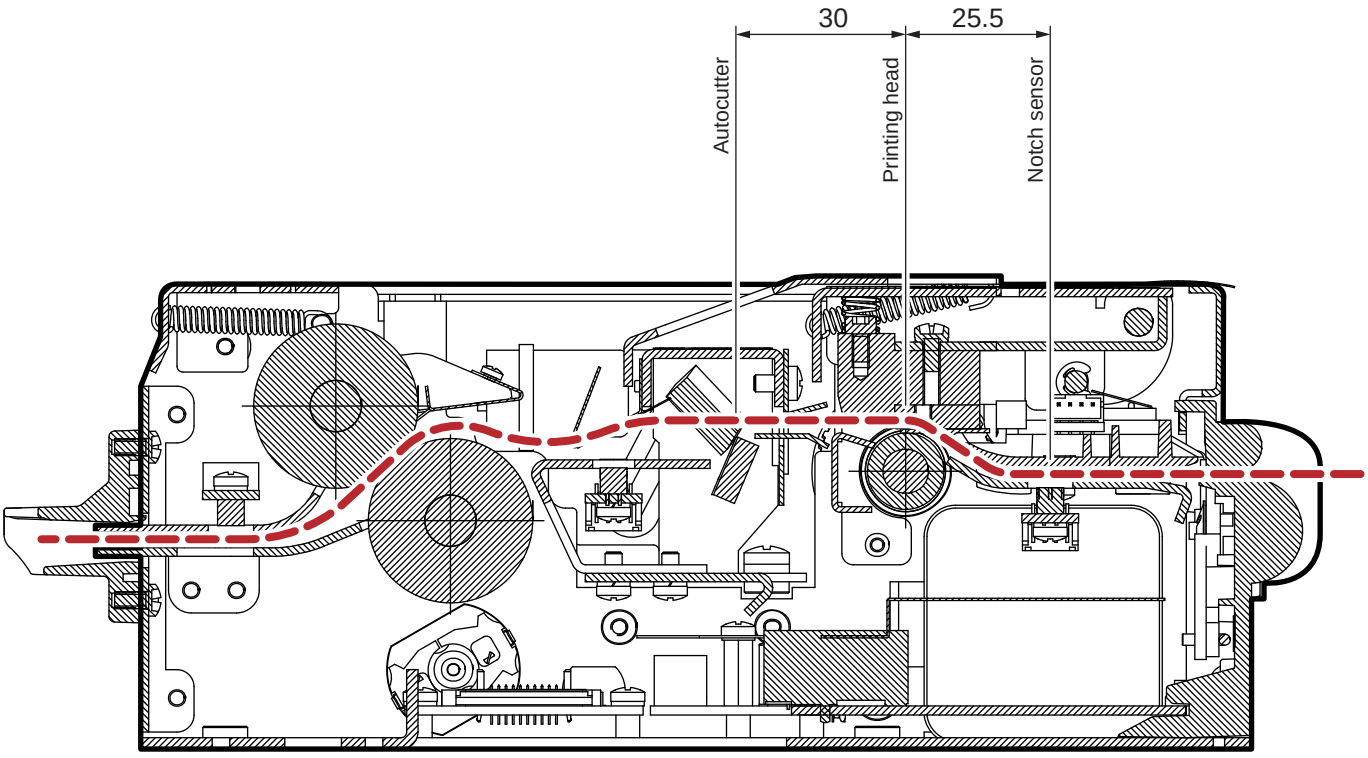
The following figure shows an example of paper with alignment point set by a positive value of “Notch Distance” (“Notch Distance” = + A):



To set a negative value of the “Notch Distance” parameter is useful in cases where the alignment point refers to the notch printed on the previous ticket or where the desired cutting line is placed in the middle of the alignment notch (for example, for paper with holes or gap). In the following images, the value of “Notch Distance” parameter is set to -A.



The following figure shows a section of the device with the paper path and the distances (in mm) between the alignment sensor, the printing head and the cutter (cutting line).



ESC/POS™ EMULATION

To define the alignment point you need to set the printer parameters that compose the numerical value of the “Notch Distance” parameter. (see par.5.4).
For example, to set a notch distance of 15mm between the notch and the alignment point, the parameters must be set on the following values:

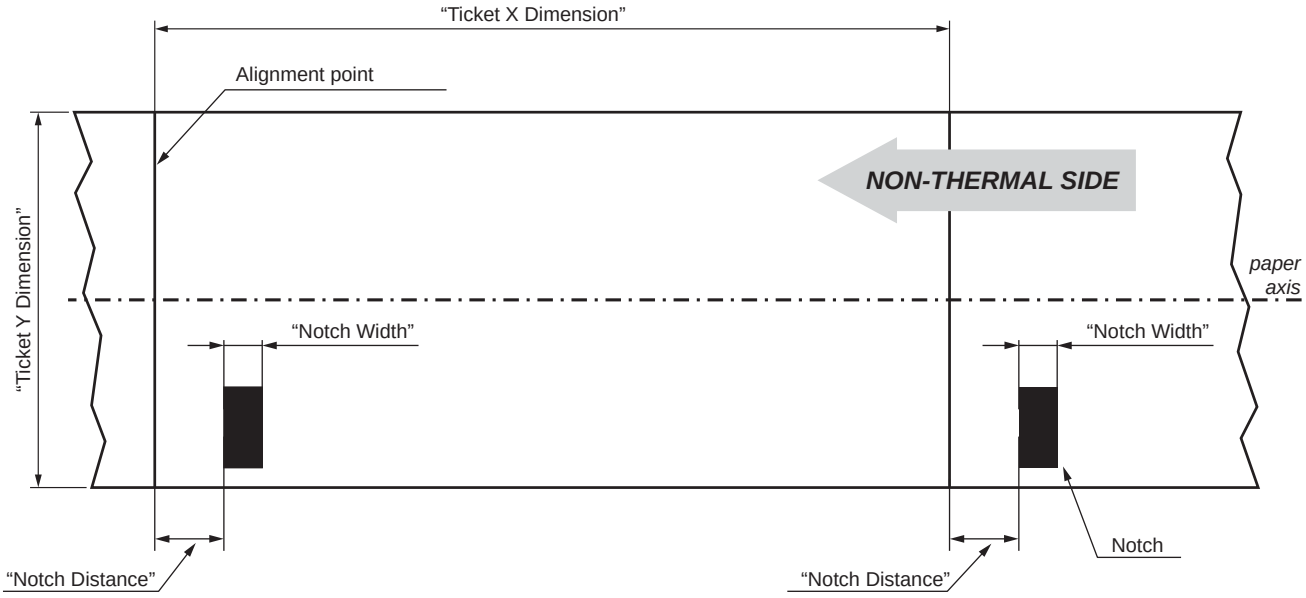
Notch Distance Sign	: +
Notch Distance [mm x 10]	: 1
Notch Distance [mm x 1]	: 5
Notch Distance [mm x .1]	: 0

The “Notch Distance” parameter, may be modified as follows:
- during the Setup procedure of the device (see chapter 5)
- by modifying the Setup.ini file (see par.12.9)
- by using the $1D $E7 command (for more details, refer to the Commands Manual)
- by driver

SVELTA EMULATION

The ticket features and the alignment parameters, may be modified as follows:
- by using the parameters of the <LHT> command (for more details, refer to the Commands Manual)
- by modifying the Setup.ini file (see par.12.9)
- by driver

The following figure shows the some of parameters for alignment of the Setup.ini file:
- “Ticket X Dimension”
- “Ticket Y Dimension”
- “Notch Width”
- “Notch Distance”

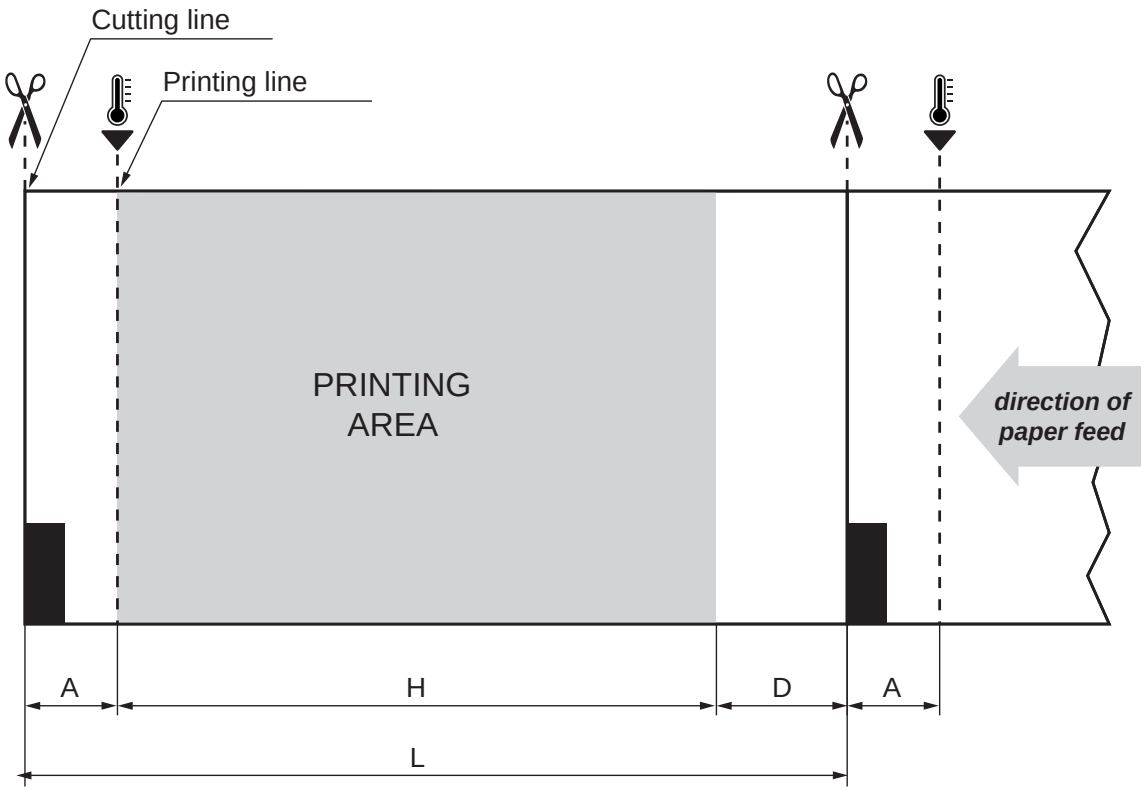


10.4 Printing area

In order to print ticket containing only one notch and to not overlay printing to a notch (that will make it useless for the next alignment), it is important to well calibrate:

- The height of the printing area of ticket according to the inter-notch distance
- The value for the paper recovery after a cut

The following figure shows an example of tickets with “Notch Distance” set to 0:



A “Non-printable area” = ***“Distance between cutter/printing head” - “Value for the paper recovery after a cut”***

where:
“Distance between cutter/printing head” = 30mm (fixed distance)
“Value for the paper recovery after a cut” = 29mm

In ESC/POS™ Emulation use the command $1C $C1 to set the “Value for the paper recovery after a cut” (see manual controls).

H Distance between the first and the last print line, called “Height of the printing area”.

L Distance between an edge of the notch and the next one, called “Inter-notch distance”.

D Automatic feed for alignment at the next notch.

To use all the notches on the card, you must comply with the following equation:

$$H + A \leq L$$

The height of the printing area (H) can be increased to make no progress on alignment (D = 0) but no further.

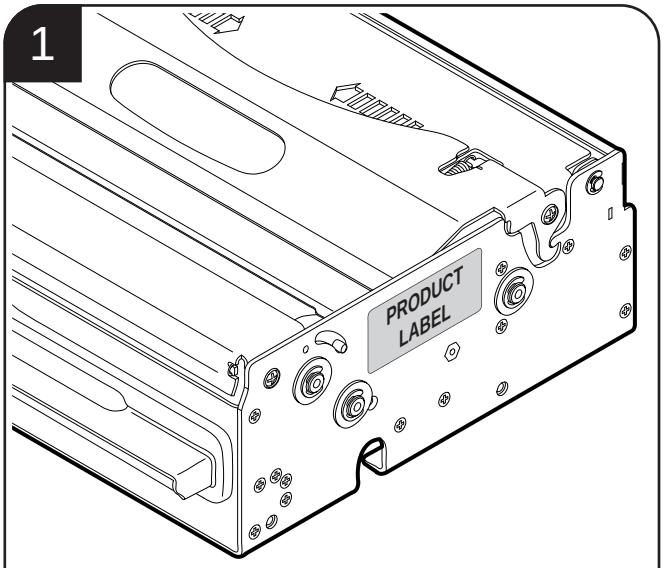
11 TECHNICAL SERVICE

In case of failure, contact the Technical Service by sending an e-mail to support@custom.it detailing:

1. Product code
2. Serial number
3. Hardware release
4. Firmware release

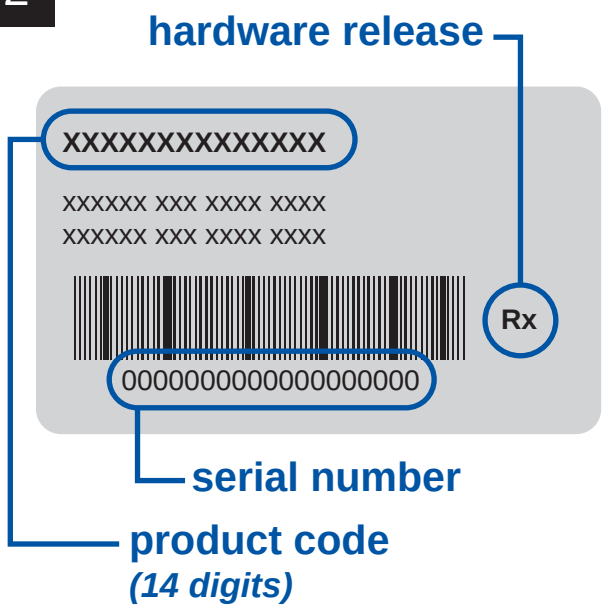
To get the necessary data, proceed as follows:

1



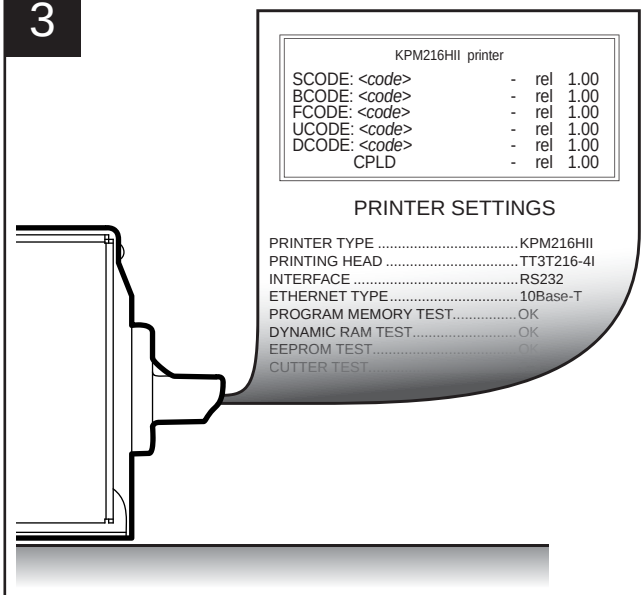
Find the product label located on the side of the printer.

2



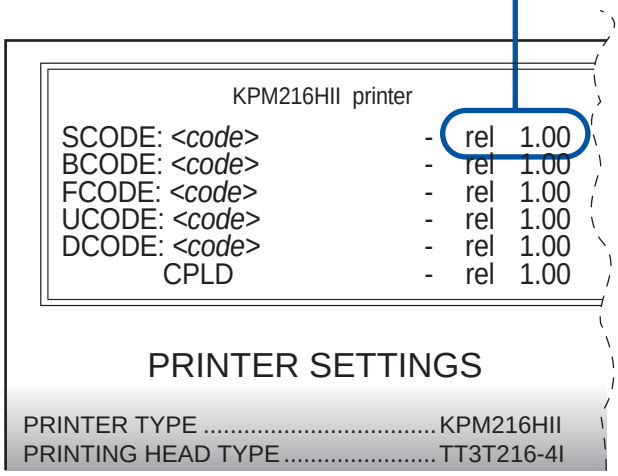
The label shows the product code, the serial number and the hardware release.

3



Print a Setup report (see paragraph 5.1)

4



The Setup report shows the firmware release.

5

support@custom.it
Customer Service Department

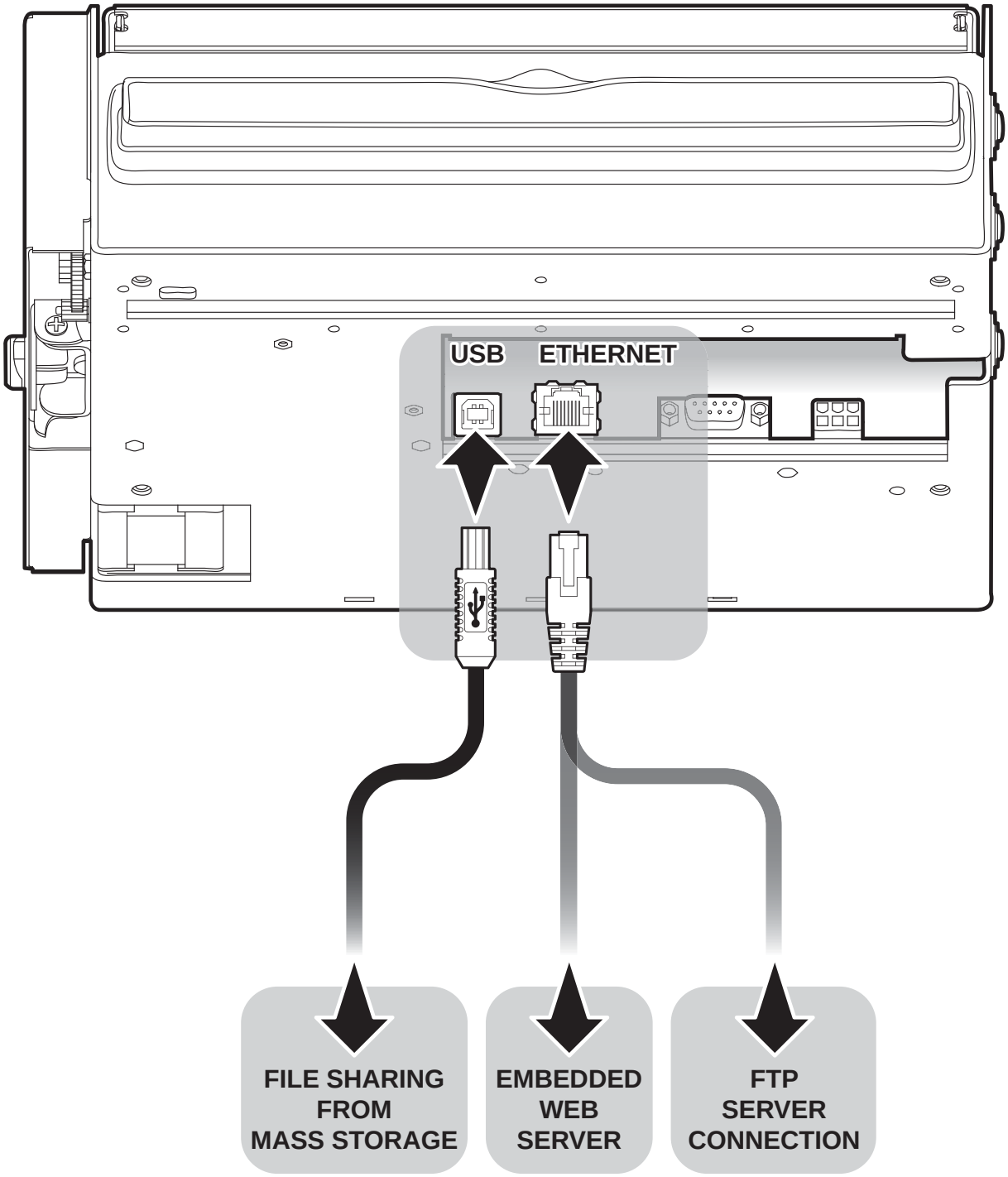
Send an e-mail to the Technical Service, with the data collected.

12 ADVANCED FUNCTIONS

12.1 File sharing

The printers can be connected to a PC through two types of connections (see par.3.5):
1. with USB cable
2. with Ethernet cable.

According to the connection made, it is possible to manage drivers, fonts and logos of the printer and configure the operating parameters in three different ways
1. by files sharing from Mass Storage, in case of USB connection
2. by files sharing from FTP Server connection, in case of Ethernet connection
3. by entering the Embedded Web Server, in case of Ethernet connection.



12.2 Embedded Web Server

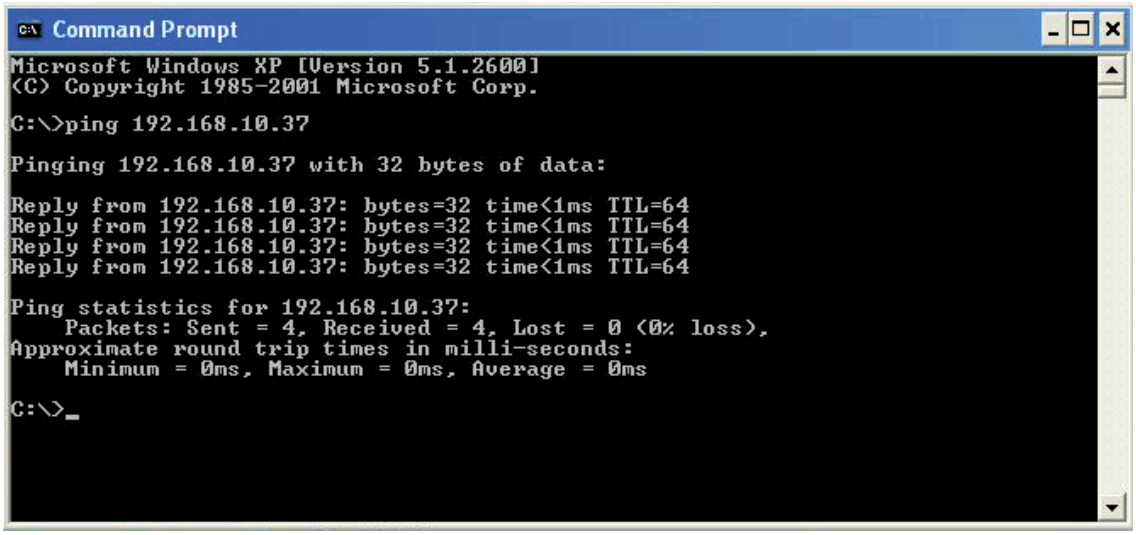
Printers are equipped with an Embedded Web Server that allows to execute some operations on printers, through a clear web interface, including:

- monitoring the printer status;
- setting operating parameters;
- configuring network settings;
- managing the logos;
- configuring the email service to make diagnostics and maintenance operations easier;
- download printing drivers.

Before entering in the Embedded Web Server, check that:

- the printer is connected and turned on;
- the printer has a network connection based on the IP protocol;
- the following ports are opened (if a Firewall is present on computer): 9100 (or differently set up). 15000, 15001, 15002;
- have a Web browser on the computer;
- the printer is connected to the network and its IP address and its Subnet Mask are set up in a correct way. To check the setting of these parameters, open a new terminal window and type “ping” on the command bar followed by the IP address of the printer. The picture shows an example of a positive result after the “ping” command. Otherwise, if connection isn’t possible, to its IP address, a failure notice will appear.

Example: ping 192. 168. 10. 37



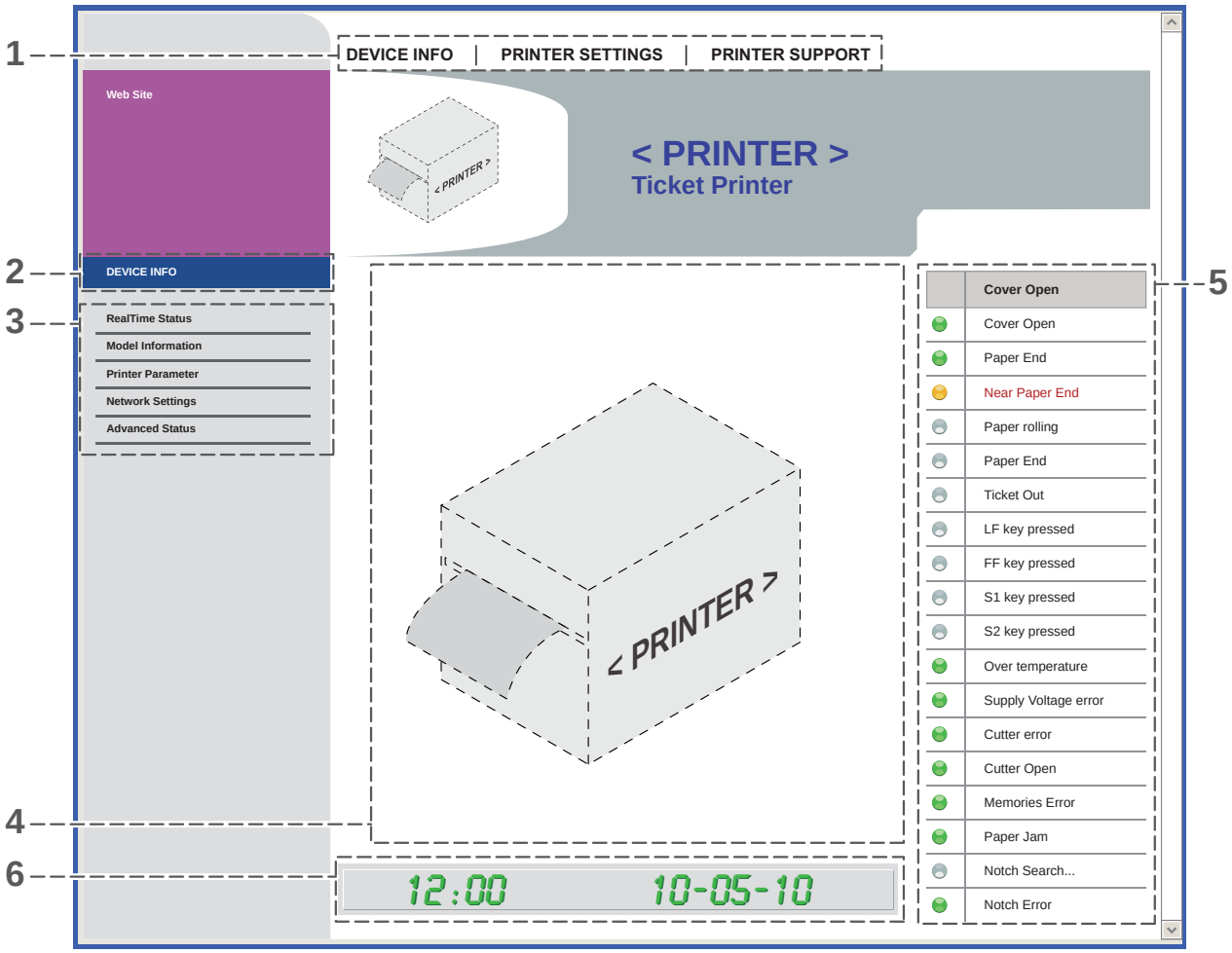
12.3 Embedded Web Server: access

To enter the Embedded Web Server, type the IP address assigned to the printer into Web browser. For example, if IP address of the printer is 192.168.10.37, type in the Web browser:

http://192.168.10.37

On the screen will appear the internal default page that corresponds to the section “Device Info” The home page is divided into 6 areas whose functions are described below:

1.	**SECTIONS:**	The web server has three sections listed within each web page. These sections are: Device Info, Printer Settings, Printer Support.
2.	**CURRENT PAGE**	Reports section currently displayed.
3.	**TOOLS**	Lists the tools available within the chosen section.
4.	**PRINTER PICTURE**	Displays a picture representative of the printer operational status. The picture changes depending on the parameters reported in area number 5.
5.	**REAL TIME STATUS**	Report a list of operating parameters controlled and monitored in real time (with a regular refresh from 5 to 15sec).
6.	**TIME AND DATE**	Displays the current time and date.



NOTE:
To know the IP address of the printer, print the Set-up report of the printer (see chapter 5) or use “Locator”.

To enter some sections and some configuration services, it is required the identification of the user and password. To make registration and to obtain the access to the restricted areas, when it is required insert the user name and the password as indicated in the following table:

User Name	**Custom**
Password	**AlwaysOn**

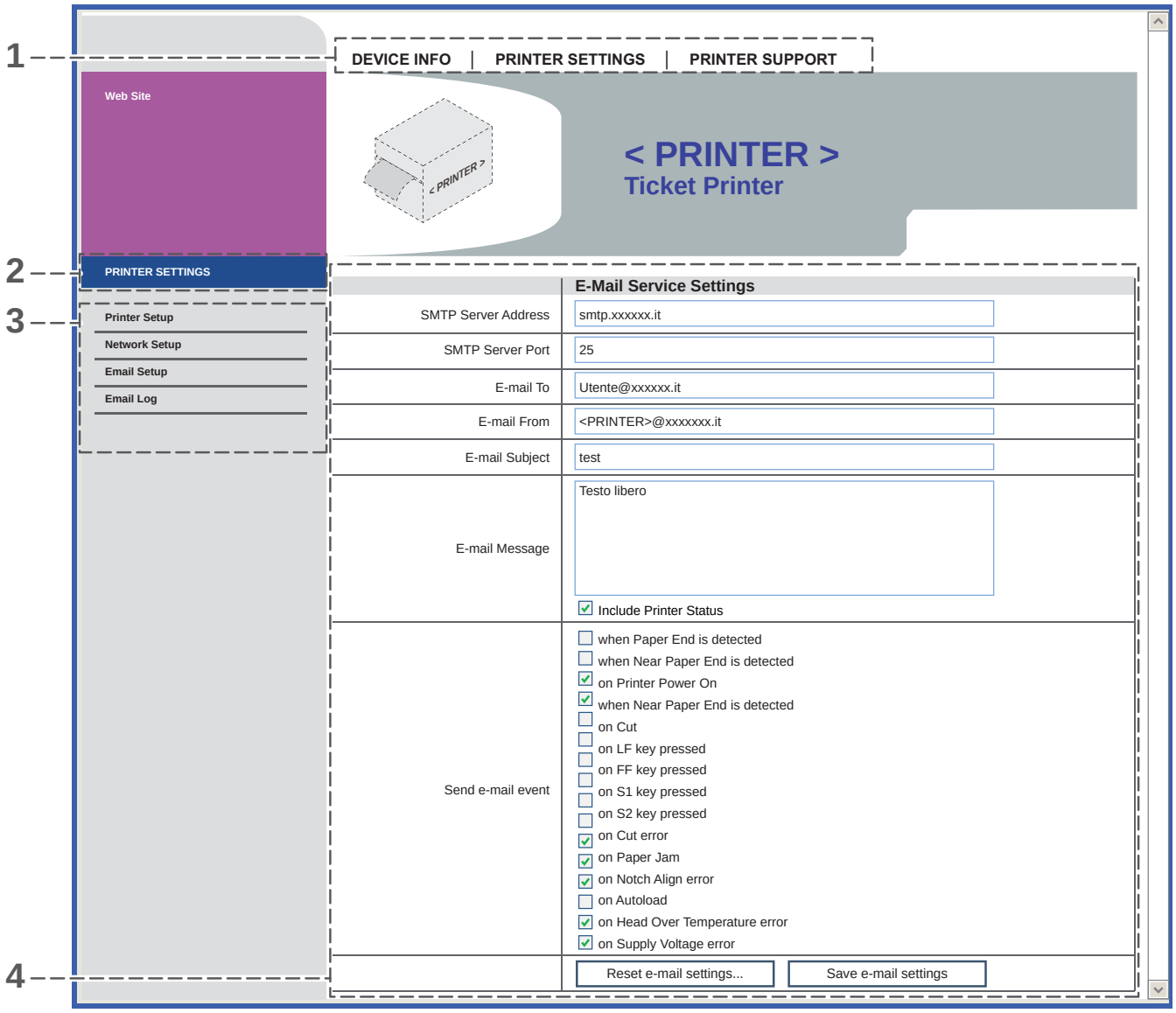
NOTE:
Respect capital and small letters as indicated in table.

12.4 Embedded Web Server: functions

The “Printer Settings” section is a restricted one. To enter the section, it is required the identification of the user and password. With the tools of this section, it is possible to set up the same parameters of the printer that are configurable in the printer’s Set-up mode (see chapter 5).

The following figure shows the page for the “EMAIL SETUP” tool. It is divided into 4 areas:

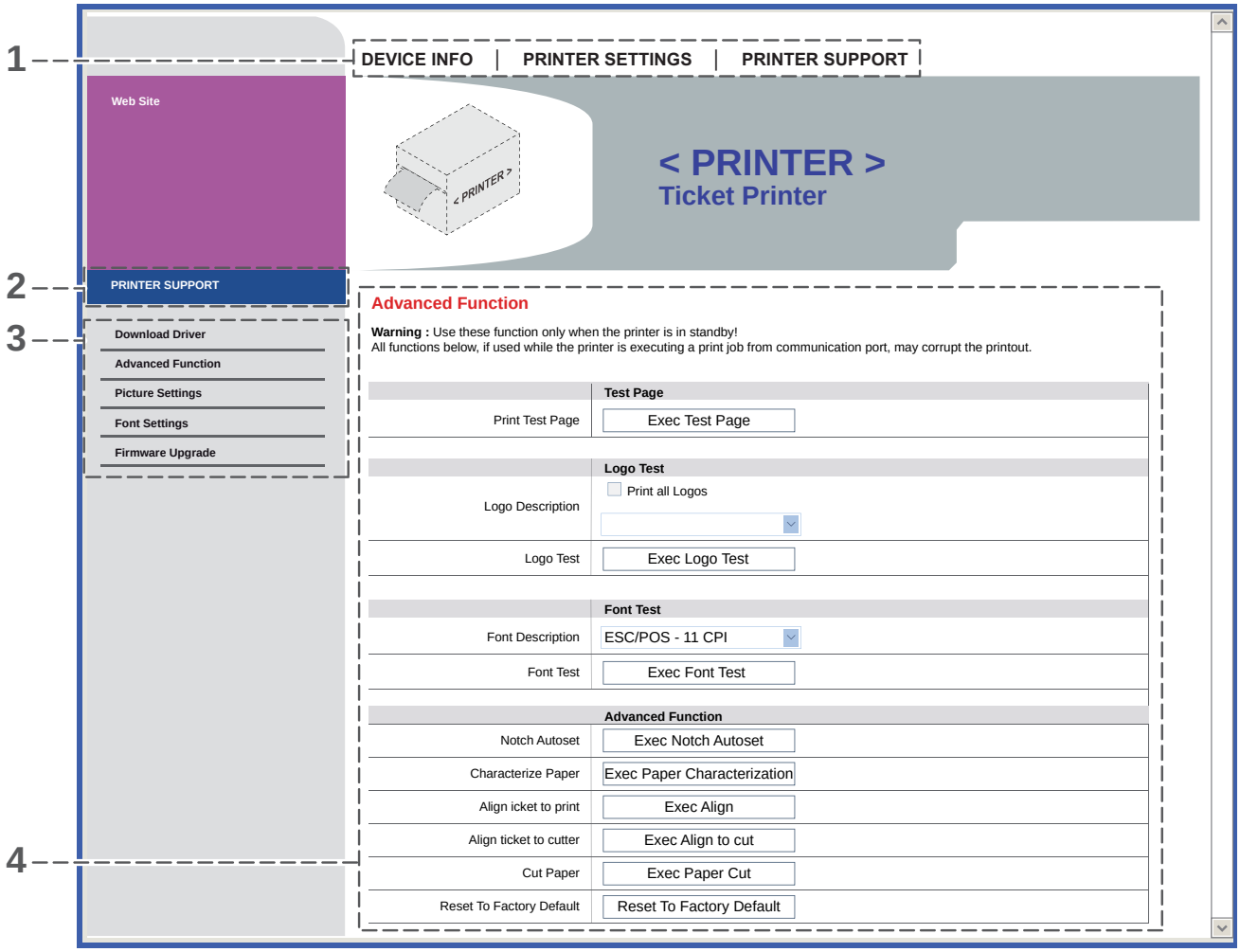
1. **SECTIONS:** The web server has three sections listed within each web page. These sections are: Device Info, Printer Settings, Printer Support.
2. **CURRENT PAGE** Reports section currently displayed.
3. **TOOLS** Lists the tools available within the chosen section.
4. **EMAIL SETUP** Displays the fields available to configure the automatically delivery of service email in order to inform the user when a change occurs to operating status of the printer. It is possible to select the events to enable the sending of the email



With the tools in the “Printer Support” section, it is possible to download drivers, manage logos and test some printer function for demonstrative and service purpose,

The following figure shows the page for the “ADVANCED FUNCTIONS” tool. It is divided into 4 areas:

1. **SECTIONS:** The web server has three sections listed within each web page. These sections are: Device Info, Printer Settings, Printer Support.
2. **CURRENT PAGE** Reports section currently displayed.
3. **TOOLS** Lists the tools available within the chosen section.
4. **ADVANCED FUNCTION** Displays all the tests available for the printer: printing a test page, the font test and the logos test, the self-calibration of the notch sensors and the ticket alignment.

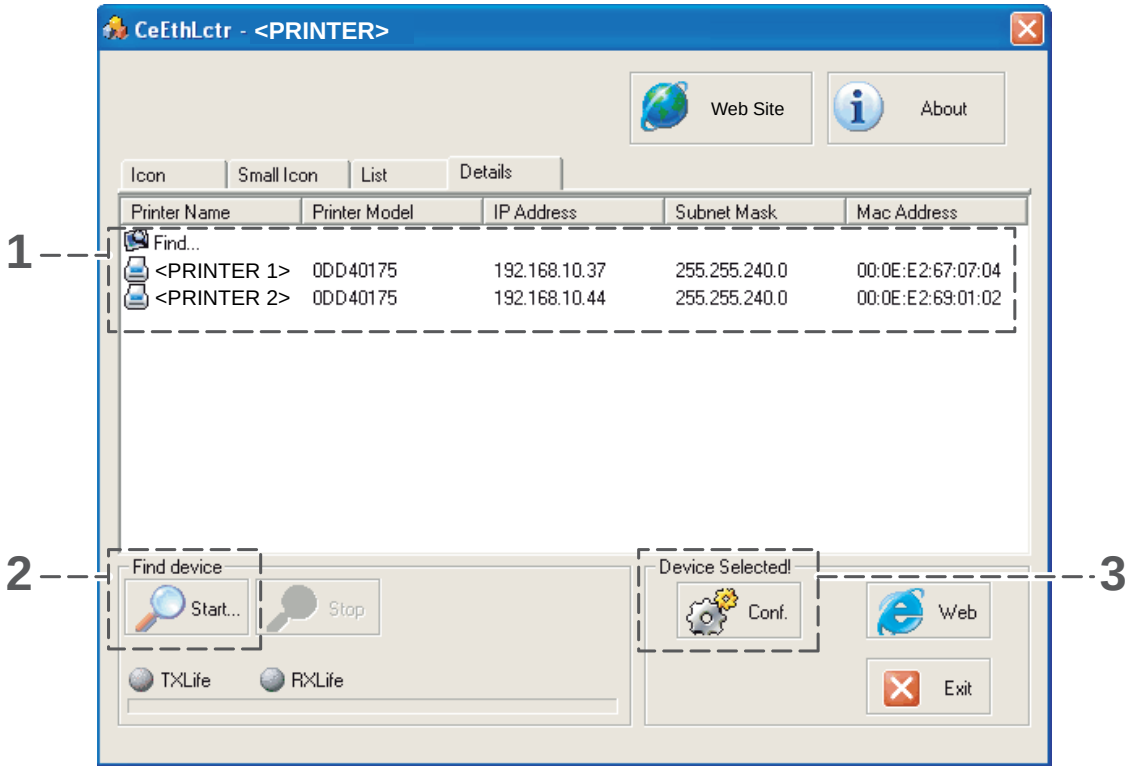


12.5 Locator

With the printers it is possible to use an external software to perform a search for printers connected to the network with Ethernet cable, even without knowing the IP addresses of individual printers

The following figure shows the software interface:

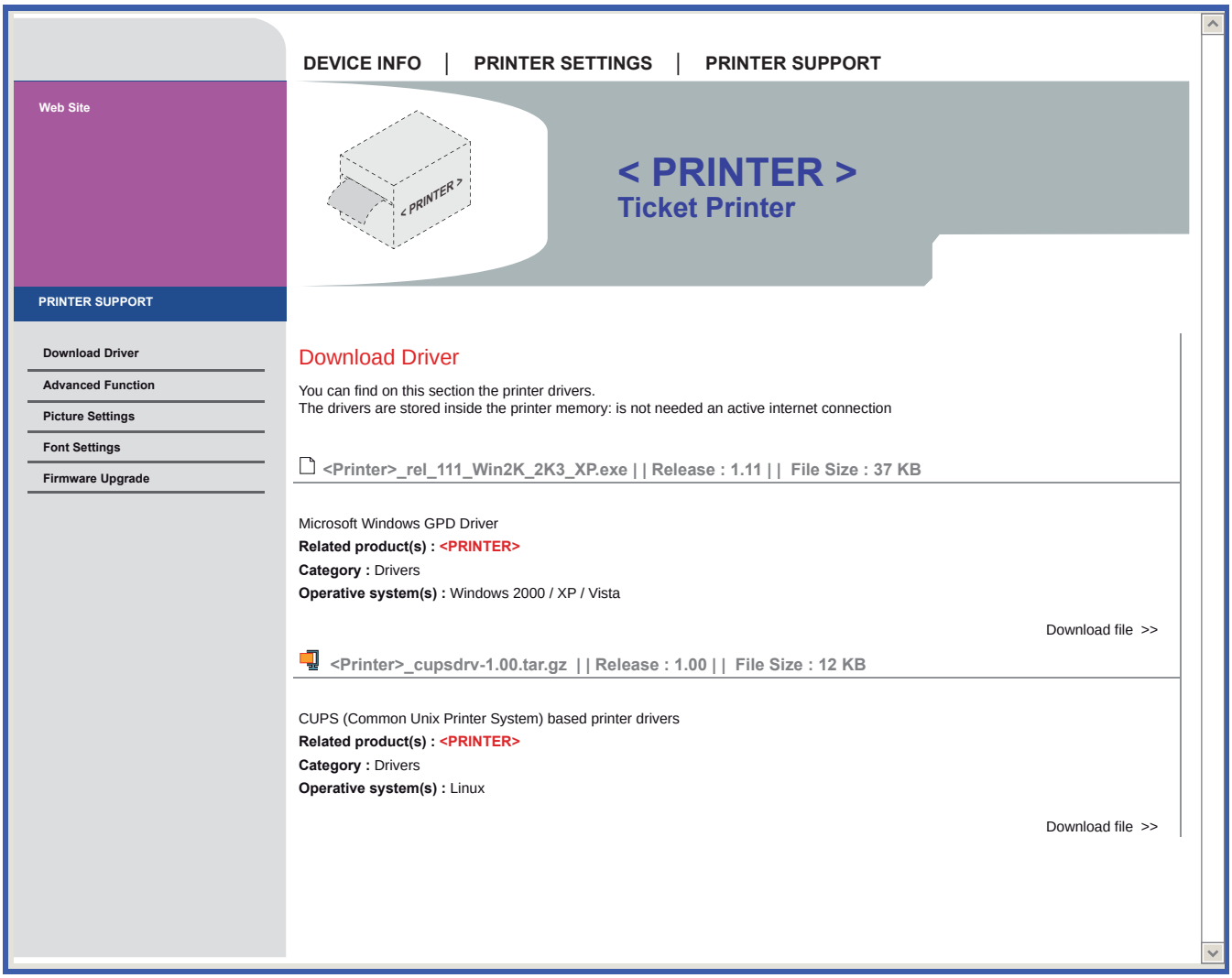
1. **DEVICES:** Displays the list of the connected printers.
2. **"START..."** Stars a new search.
3. **"CONF."** Enters the configuration window of the network parameters of the selected printer.



12.6 Drivers installation

Embedded Web Server

To install a new driver update for the printer, enter the “DRIVER” page of the “PRINTER SUPPORT” section of the embedded Web Server (see the following figure).



Mass Storage / FTP Server

It is possible to install the new driver update directly into the folder “DRIVER” on the Flash Drive of the printer.
You can enter the Flash Drive by files sharing from Mass Storage or by files sharing from FTP Server connection (see par.12.1).
In both cases, the relative parameter should be enabled during the configuration process (see chapter 5).

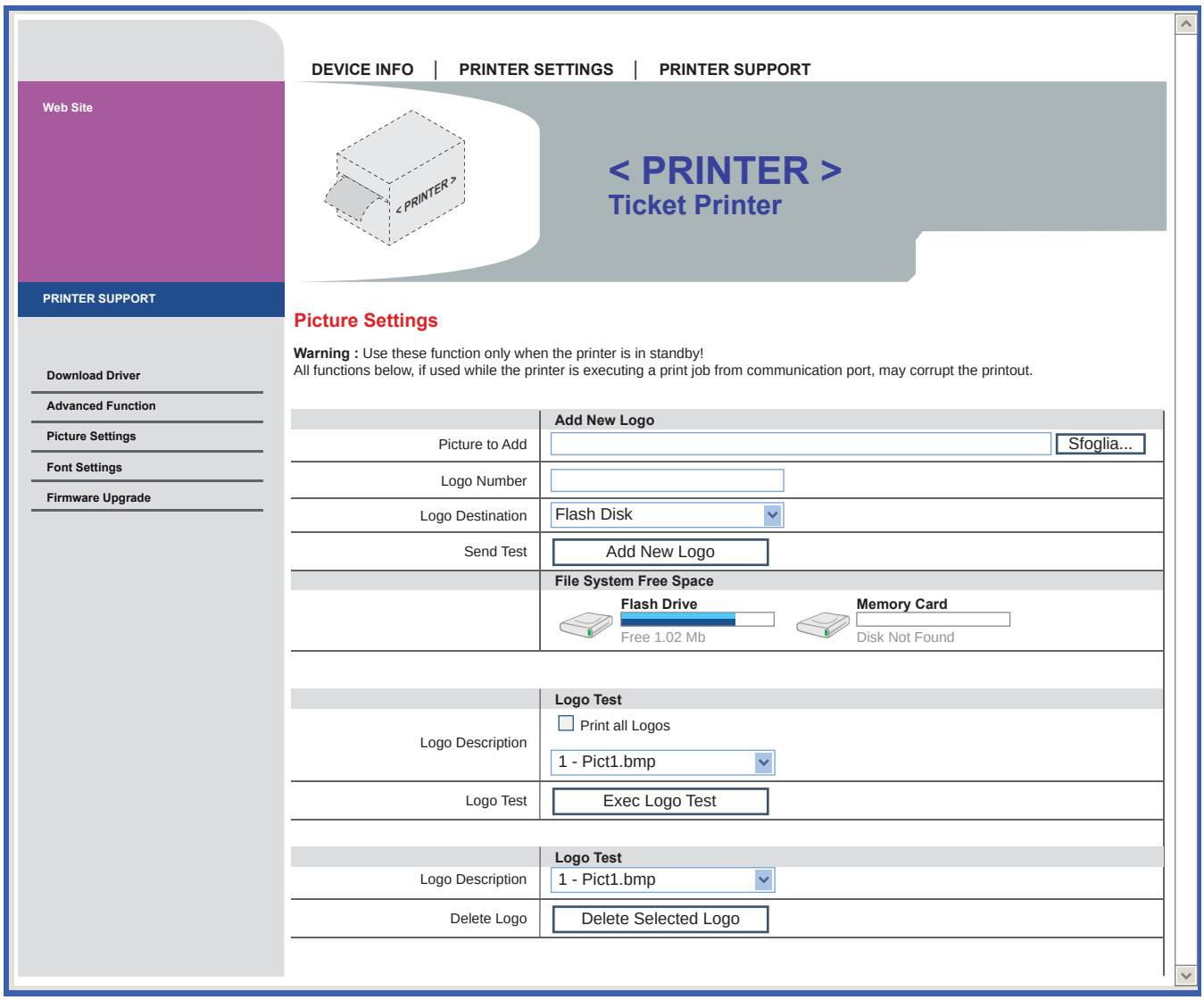
NOTE:
To know the IP address of the printer, print the Set-up report of the printer (see chapter 5) or use “Locator”. Type in the address bar “ftp://” followed by the IP address of the printer.

12.7 Logos management

It is possible to store new logos in addition to default logos stored on Flash Disk. The printer automatically provides to convert BMP image to the error-diffusion format in black and white.
Logos may be stored both on Flash Disk and on the Memory Card. The use of the Memory Card allows to handle more logos (however, the max number of manageable logos is limited by the RAM memory reserved for logos management).

Embedded Web Server

To add a new logo to the printer enter the “PICTURE SETTINGS” page of the “PRINTER SUPPORT” section of the embedded Web Server (see the following figure).



Mass Storage / FTP Server

It is possible to add the new logo directly into the folder “PICTURES” on the Flash Drive of the printer.
You can enter the Flash Drive by files sharing from Mass Storage or by files sharing from FTP Server connection (see par. 12.1).
In both cases, the relative parameter should be enabled during the configuration process (see chapter 5).

After adding the logo, open the configuration file “PictList.ini” and add a new line with a number associated to the logo (to be used with printer’s commands), a letter for the memory unit and the logo file name, as indicated in the instructions written inside the “PictList.ini” file.

To delete a logos stored in the printer, proceed as follows:
1. delete the selected logo from the “Pictures” folder on Flash Disk or SD/MMC card;
2. in the configuration file “PictList.ini”, delete the line related to the erased logo.

The logos stored into a unit memory and converted by the printer, can be printed by using the number associated to the logo during the conversion step.
The correspondence between file-name and logo-number is warrant by the configuration file “PIctList.ini” and it is verifiable with the logo test.

NOTE:
To know the IP address of the printer, print the Set-up report of the printer (see chapter 5) or use “Locator”. Type in the address bar “ftp://” followed by the IP address of the printer.

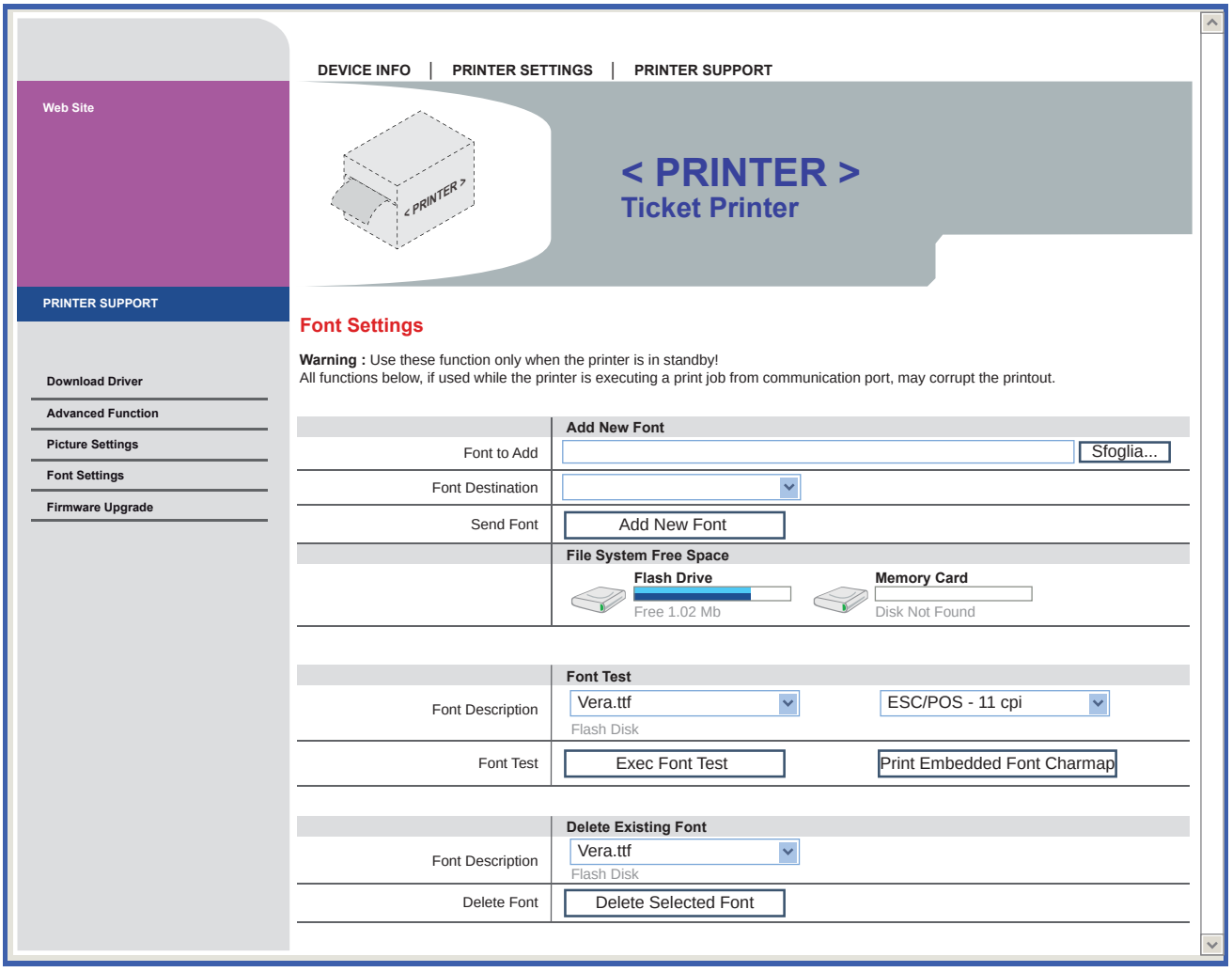
ATTENTION:
The configuration file “PictList.ini” on the printer’s Flash Disk, has to be modified even if the new added logo is stored on SD/MMC.

12.8 Fonts management

It is possible to store new font in addition to default fonts stored on Flash Disk. Fonts may be stored both on Flash Disk and on the Memory Card.
The use of the Memory Card allows to handle more fonts (however, the max number of manageable fonts is limited by the RAM memory reserved for fonts management).

Embedded Web Server

To add a new font to the printer enter the “FONT SETTINGS” page of the “PRINTER SUPPORT” section of the embedded Web Server (see the following figure).



Mass Storage / FTP Server

It is possible to add the new font directly into the folder “FONTS” on the Flash Drive of the printer.
You can enter the Flash Drive by files sharing from Mass Storage or by files sharing from FTP Server connection (see par. 12.1).
In both cases, the relative parameter should be enabled during the configuration process (see chapter 5).

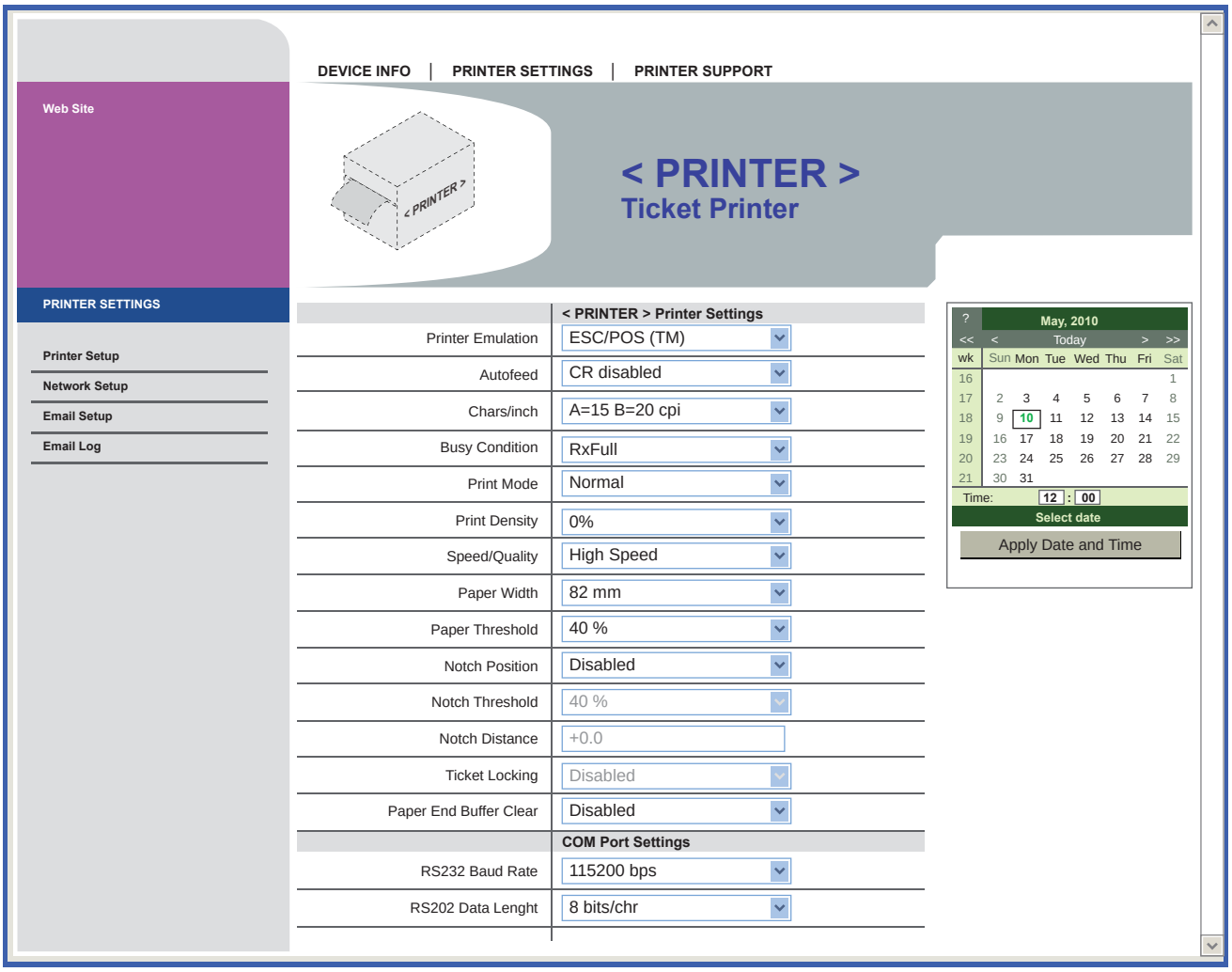
NOTE:
To know the IP address of the printer, print the Set-up report of the printer (see chapter 5) or use “Locator”. Type in the address bar “ftp://” followed by the IP address of the printer.

NOTE:
Uploading the new font directly from the “Font” folder of Microsoft® Windows® directory, remember that the displayed font name into the “Font” folder may not match the real name of the font file.

12.9 Setup

Embedded Web Server

Printer permits the configuration of default parameters for printer and network setup by entering the “PRINTER SETUP” page and the “NETWORK SETUP” page of the “PRINTER SETTINGS” section of the embedded Web Server (see the following figure).



Mass Storage / FTP Server

It is possible to configure the default parameters for printer and network setup by editing the “Setup.ini” file on the printer Flash Drive.
You can enter the Flash Drive by files sharing from Mass Storage or by files sharing from FTP Server connection (see par.12.1).
In both cases, the relative parameter should be enabled during the configuration process (see chapter 5).
After editing printer’s parameter, simply save the “Setup.ini” file to make the modifies activated.

The “Setup.ini” file is a configuration file that contains all the configurable parameters listed in text format and divided into some sections (indicated in square brackets).
The available values for every parameter, are listed after the parameter name. The value marked with the symbol ‘ * ’ is the default one.
To modify printer’s parameters, change the numeric value after the name of parameters. To set the parameter to the default value, change the numeric value with the symbol D.
The “Setup.ini” file permits the configuration of the following parameters:

[PRINT]

Printer Emulation:	0, 1*	0 = ESC/POS™ 1 = SVELTA
Print Mode:	0*, 1	0 = Normal 1 = Reverse
Autofeed:	0*, 1	0 = CR disabled 1 = CR enable
Chars / inch:		
200 dpi models	0, 1*	0 = A=11 B=15 cpi 1 = A=15 B=20 cpi
300 dpi models	0, 1*	0 = A=16 B=23 cpi 1 = A=23 B=30 cpi
Speed / Quality:	0, 1*, 2	0 = High Quality 2 = High Speed 1 = Normal
Automatic Ejecting:	0*, 1, 2, 3, 4, 5, 6, 7, 8	0 = Disabled 1 = Enabled T.out 5 S 2 = Enabled T.out 10 S 3 = Enabled T.out 15 S 4 = Enabled T.out 20 S 5 = Enabled T.out 30 S 6 = Enabled T.out 40 S 7 = Enabled T.out 60 S 8 = Enabled T.out 2 m
Paper Retracing:	0*, 1, 2, 3, 4, 5, 6, 7, 8, 9	0 = Disabled 1 = Enabled NoTimeout 2 = Enabled T.out 5 S 3 = Enabled T.out 10 S 4 = Enabled T.out 15 S 5 = Enabled T.out 20 S 6 = Enabled T.out 30 S 7 = Enabled T.out 40 S 8 = Enabled T.out 60 S 9 = Enabled T.out 2 m
Paper Width:	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14*	0 = 172 mm 1 = 174 mm 2 = 176 mm 3 = 178 mm 4 = 180 mm 5 = 182 mm 6 = 184 mm 7 = 186 mm 8 = 188 mm 9 = 190 mm 10 = 192 mm 11 = 194 mm 12 = 196 mm 13 = 198 mm 14 = 200 mm
Paper Threshold:	0*, 1, 2, 3, 4, 5, 6	0 = 30 % 1 = 40 % 2 = 50 % 3 = 60 % 4 = 70 % 5 = 80 % 6 = 90 %

Notch Alignment:	0*, 1	0 = Disabled 1 = Enabled		
Notch Threshold:	0, 1*, 2, 3, 4, 5, 6	0 = 30 % 1 = 40 % 2 = 50 %	3 = 60 % 4 = 70 % 5 = 80 %	6 = 90 %
Notch Distance [mm]				
PaperEnd Buffer Clear:	0*, 1	0 = Disabled 1 = Enabled		
Short ticket (<150mm):	0*, 1	0 = Disabled 1 = Enabled		
Print Density:	0, 1, 2, 3, 4*, 5, 6, 7, 8	0 = - 50 % 1 = - 37 % 2 = - 25 %	3 = - 12 % 4 = 0 % 5 = + 12 %	6 = + 25 % 7 = + 37 % 8 = + 50 %

[INTERFACE]

RS232 Baud Rate:	1, 2, 3, 4, 5, 6, 7, 8*	1 = 1200 bps 2 = 2400 bps 3 = 4800 bps	4 = 9600 bps 5 = 19200 bps 6 = 38400 bps	7 = 57600 bps 8 = 115200 bps
RS232 Data Length:	0*, 1	0 = 8 bits/chr 1 = 7 bits/chr		
RS232 Parity:	0*, 1, 2	0 = None 1 = Even	2 = Odd	
RS232 Handshaking:	0*, 1	0 = Xon/Xoff 1 = Hardware		
Busy Condition:	0*, 1	0 = RxFull 1 = OffLine/RxFull		
USB Mass Storage:	0*, 1	0 = Disabled 1 = Enabled		
USB Address Number:	0*, 1, 2, 3, 4, 5, 6, 7, 8, 9	0 = 0 1 = 1 2 = 2 3 = 3	4 = 4 5 = 5 6 = 6 7 = 7	8 = 8 9 = 9

[SVELTA]

Ticket X Dimension
Ticket Y Dimension
Notch Distance
Notch Width
Barcode Timeout
Ticket Offset X
Ticket Offset Y

[NETWORK]

DHCP Client:	0*, 1	0 = Disabled 1 = Enabled	

FTP Server:	0*, 1	0 = Disabled 1 = Enabled
IP Address		
Subnet Mask		
Default Gateway		
Domain Name System		
TCP Printer Port		
MAC Address *(Read only)*		

NOTE:
To know the IP address of the printer, print the Set-up report of the printer (see chapter 5) or use “Locator”. Type in the address bar “ftp://” followed by the IP address of the printer.

Part Number : 7620000002500 Rev. 1.50

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